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ABSTRACT

This report presents the results of the 1998 NAEP (National Assessment of Educational Progress) reading assessment of 4th-, 8th-, and 12th-grade students for the nation and for participating states or jurisdictions. Results in 1998 are compared to those in 1994 and 1992. It provides results for subgroups of students defined by various background and contextual characteristics. After an introduction, chapter 1 presents overall national results in terms of average scores on the NAEP composite scale and in terms of the three reading achievement levels. Chapter 2 presents average scale scores for regions of the country and for demographic subgroups of the population. Achievement level results for the regions and subgroups are presented in chapter 3. In chapter 4, school and home contextual factors related to literacy development are the focus for presenting results of the 1998 NAEP assessment. Chapter 5 looks at public school results of the state-by-state assessments at grades 4 and 8. Major findings are: (1) average reading scores increased for students in grades 4, 8, and 12; (2) at all 3 grades in 1998, female students had higher average reading scale scores than their male peers; (3) at all 3 grades in 1998, the average reading score for White students was higher than that for Black, Hispanic, and American Indian students; (4) students in 1998 who reported higher levels of parental education had higher average reading scale scores; (5) students attending nonpublic schools had higher average scale scores than their counterparts attending public schools; and (6) students who reported watching 3 or fewer hours of television each day had higher average reading scores than students who reported watching more television. Appendixes contain an overview of the procedural aspects the standard errors for all data presented; sample texts for the released questions; 1998 state level results for additional subgroups

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not discussed in Chapter 5; and characteristics of individual states and jurisdictions that are drawn from non-NAEP sources. (RS)

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NAEP 1998 Reading

REPORT CARD FOR THE NATION AND THE STATES

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March 1999

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U.S. Department of Education
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NCES 1999-500

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THE NATION'S REPORT CARD, the National Assessment of Educational Progress (NAEP), is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students and their families.

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NAEP 1998 Reading

REPORT CARD FOR THE NATION AND THE STATES

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EXECUTIVE SUMMARY

The National Assessment of Educational Progress (NAEP) is the nation's only ongoing survey of what students know and can do in various academic subject areas. Authorized by Congress and administered by the National Center for Education Statistics in the Department of Education, NAEP regularly reports to the public on the educational progress of students in grades 4, 8, and 12. In 1998, NAEP conducted a national reading assessment of fourth-, eighth-, and twelfth-grade students, and a state-by-state reading assessment of fourth- and eighth-grade students.

This report presents the results of the 1998 NAEP reading assessment for the nation and for participating states or jurisdictions. Results in 1998 are compared to those in 1994 and 1992. Students' performance on the assessment is described in terms of their average score on a 0-to-500 scale, and in terms of the percentage of students attaining three achievement levels: *Basic*, *Proficient*, and *Advanced*.

The achievement levels are performance standards, adopted by the National Assessment Governing Board as part of its statutory responsibilities. The levels are collective judgments of what students should know and be able to do for each grade tested. They are based on recommendations by broadly representative panels of classroom teachers, education specialists, and members of the general public.

As provided by law, the Commissioner of Education Statistics, upon review of a congressionally mandated evaluation of NAEP, has determined that the achievement levels are to be considered developmental and should be interpreted and used with caution. However, both the Commissioner and the Board believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials, including the National Education Goals Panel, as a common yardstick of academic performance.

In addition to providing average scores and achievement level performance for the nation and states or jurisdictions, this report provides results for subgroups of students defined by various background and contextual characteristics. A summary of major findings from the 1998 NAEP reading assessment is presented on the following pages.

Reading Scale Score and Achievement Level Results

Results for the nation

- Average reading scores increased for students in grades 4, 8, and 12. At the fourth and twelfth grades, the national average score was higher in 1998 than in 1994. At eighth grade, the national average score was higher in 1998 than in 1994 and in 1992.

- While the national average reading score increased at all three grades in 1998, increased scores were not observed for all students. At grade 4, score increases were observed only among lower performing students. At grade 8, score increases were observed among lower and middle performing students. At grade 12, score increases were observed among middle and upper performing students; however, the score for lower performing twelfth graders was not as high in 1998 as it had been in 1992.

- Across the three grades (4, 8, and 12) in 1998, the percentages of students performing at or above the *Basic* level of reading achievement were 62, 74, and 77 percent; the percentages who performed at or above the *Proficient* level were 31, 33, and 40 percent; and the percentages who performed at the highest achievement level, *Advanced*, were 7, 3, and 6 percent.

- At grade 4, no significant changes since 1994 or 1992 were observed in the percentages of students attaining any of the reading achievement levels.

- At grade 8, a greater percentage of students performed at or above the *Basic* level and the *Proficient* level of reading achievement in 1998, compared to 1994 and 1992.

- At grade 12, a greater percentage of students performed at or above the *Proficient* level and the *Advanced* level of reading achievement in 1998, compared to 1994. The percentage of students at *Advanced* was also greater in 1998 than in 1992. Although the 1998 percentage at or above *Basic* was greater than that in 1994, it remained lower than the 1992 percentage.

Results for the states and other jurisdictions

- Of the 43 jurisdictions that participated in the 1998 state-by-state reading assessment at grade 4 and met the participation guidelines, Connecticut had the highest average score for public school students. The cluster of jurisdictions with the next highest average scores consisted of Department of Defense overseas schools, Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New Hampshire, and Wisconsin. Colorado performed equally well as eight of the next highest performing jurisdictions but had a lower average score than New Hampshire.

- Of the 40 jurisdictions that participated in the state-by-state reading assessment at grade 8 and met the participation guidelines, the cluster of highest-performing jurisdictions consisted of Connecticut, Department of Defense domestic schools, Maine, Massachusetts, and Montana. The Department of Defense overseas schools performed equally well as four of the high-performing jurisdictions but had a lower average score than Maine.

- For fourth-grade students in public schools, Connecticut had the highest percentage of students performing at or above the *Proficient* level of reading achievement. In 1998, the cluster of jurisdictions with the next highest percentages of fourth graders at or above *Proficient* consisted of Colorado, Department of Defense overseas schools, Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New Hampshire, and Wisconsin.

- For eighth-grade students attending public schools, the seven jurisdictions with the highest percentages of students at or above the *Proficient* level of reading achievement in 1998 were Connecticut, Department of Defense domestic schools, Department of Defense overseas schools, Maine, Massachusetts, Minnesota, and Montana.

Reading Results for Student Subgroups

Gender

- At all three grades in 1998, female students had higher average reading scale scores than their male peers, and the percentage of females attaining each of the reading achievement levels exceeded that of males.

- At grade 4, males had a higher average reading score in 1998 than in 1994; however, the average score of female fourth graders remained unchanged. At grade 8, both male and female students had higher average scores in 1998 than in 1994 and 1992. At grade 12, an apparent increase was observed for both males and females between 1994 and 1998; however, the increase was not significant for male students. The average score for male twelfth graders in 1998 remained lower than that in 1992.

Race/Ethnicity

- At all three grades in 1998, the average reading score for White students was higher than that for Black, Hispanic, and American Indian students.

- At grade 4, the only significant increase among racial/ethnic groups was observed for Black students, whose average reading score in 1998 was higher than in 1994. At grade 8, increases were evident for both White and Black students; their average scores in 1998 were higher than in 1994 and 1992. At grade 12, increases were evident for both White and Hispanic students since 1994.

Parents' level of education

- Students in grades 8 and 12 were asked to indicate their parents' highest level of education. Consistent with past NAEP assessments, students in 1998 who reported higher levels of parental education had higher average reading scale scores.
- The average reading score of eighth graders who reported the highest level of parental education, graduated from college, was higher in 1998 in comparison to both 1994 and 1992. The average score of twelfth graders who reported the lowest level of parental education, did not finish high school, was lower in 1998 than in 1992.

Regions of the country

- The 1998 results by region indicated that fourth and eighth graders in the Northeast and Central regions outperformed their counterparts in the Southeast and West. Among twelfth graders, students in the Southeast had lower average reading scores than students in the other three regions. Also among twelfth graders, students in the Central region outperformed students in the West region.
- An examination of results for students within four regions — Northeast, Southeast, Central, and West — reveals four changes across the assessment years. In the Northeast, the 1998 average reading score for eighth graders was higher than in 1992, and fourth graders showed an increase between 1994 and 1998. In the Southeast, eighth graders had a higher average score in 1998 than in 1994 and 1992. And for twelfth graders in the Central region, the 1998 average was higher than the 1994 average.

Type of location

- In 1998, fourth and eighth graders in central city schools had lower average reading scores than their counterparts in rural/small town schools or urban fringe/large town schools. Also, eighth graders in rural/small town schools had lower average scores than their counterparts in urban fringe/large town schools. No significant differences were observed among twelfth graders by type of location.
- Among students attending central city schools, eighth graders had a higher average reading score in 1998 than in 1992. Among students attending schools in urban fringe/large town locations, eighth and twelfth graders had a higher average score in 1998 than in 1994. In rural/small town schools, twelfth graders had a higher average score in 1998 than in 1994.

Free/reduced-price lunch program

- The 1998 NAEP reading assessment collected information on student eligibility for the federally funded free/reduced-price lunch program that provides children near or below the poverty line with nourishing meals. At all three grades, students who were eligible for the free/reduced-price lunch program had lower average reading scores than students who were not eligible for the program.

Type of school

- Consistent with past NAEP reading assessments, the 1998 results indicated that students attending nonpublic schools had higher average scale scores than their counterparts attending public schools.
- At grades 8 and 12, there was an increase between 1994 and 1998 in the average reading score of students attending public schools. For eighth-grade public school students, the 1998 average was also higher than the 1992 average. While there was no significant change at any grade in the average score for all nonpublic schools, eighth graders attending nonpublic Catholic schools had an average score in 1998 that was higher than in 1992.

School and Home Factors Related to Reading Performance

Pages read for school and homework

- In 1998, at all three grades assessed, students who reported reading more pages daily in school and for homework had higher average scale scores than students who reported reading fewer pages daily.
- The 1998 results indicate that students in grades 8 and 12 are reading more pages each day for school and for homework than in 1994.

Explain understanding/discuss interpretations

- Eighth- and twelfth-grade students reported on how often they were asked to explain their understanding and discuss interpretations of their reading. At both grades, a positive relationship was observed between these instructional activities and student reading performance. Students who reported being asked by their teachers to explain their understanding or discuss interpretations at least once a week had higher average scores in 1998 than their classmates who reported doing so less than weekly.
- At grade 8, students' reports in 1998 indicated an increase in the frequency of both of these activities since 1994 and 1992. Twelfth graders' reports indicated an increase since 1994 in the frequency of being asked to explain their understanding.

Writing long answers in response to reading

- At all three grades, a positive relationship between writing long answers to questions on tests and assignments that involved reading and student reading performance is generally supported by findings from the 1998 NAEP assessment. Students who reported engaging in this activity on a weekly or a monthly basis had higher average scores than students who reported doing so only once or twice a year, or hardly ever. At the twelfth grade, students who reported doing such writing at least once a week demonstrated the highest reading performance.
- Increases since 1994 in the frequency of this activity were indicated in the 1998 reports of fourth and eighth graders.

Reading self-selected books in school

- Fourth-grade students who reported that their teachers gave them time to read books of their own choosing on a daily basis had a higher average score than their peers who reported being given time to do so less often. However, at grades 8 and 12 this activity did not have a positive relationship with average reading scores.
- Students' reports in 1998 indicated an increase since 1994 in the frequency of this activity for fourth graders, while the reports of eighth and twelfth graders indicated an increase since 1992.

Discussing studies at home

- At all three grades in 1998, students who reported at least weekly home discussions about their studies had higher average reading scores than students who reported discussing their studies less frequently. At the eighth and twelfth grades, having such discussions almost every day was associated with the highest average score.
- Students' reports in 1998 indicate little change across assessment years in the percentages of students discussing their studies at home more or less frequently.

Talking about reading with family or friends

- At all three grades in 1998, students who reported talking about their reading activities with family or friends once or twice a week, or at least monthly, had higher average reading scores than students who reported doing so rarely or never.
- At grades 8 and 12, students' reports in 1998 indicated that they are talking about their reading activities less frequently in comparison to their reports in 1992.

Television viewing

- At all three grades in 1998, students who reported watching three or fewer hours of television each day had higher average reading scores than students who reported watching more television.
- Results of the 1998 reading assessment are encouraging in that they indicate decreases since 1994 in the amount of time students spend watching television each day.

This Report

This report comprises five chapters, each focusing on different results of the NAEP 1998 reading assessment. The Introduction provides an overview of the assessment framework, instrument, and design. Chapter 1 presents overall national results in terms of average scores on the NAEP composite scale and in terms of the three reading achievement levels. Also included in this chapter are sample student responses to selected NAEP questions and maps of selected questions on the NAEP reading composite scale. Chapter 2 presents average scale scores for regions of the country and for demographic subgroups of the population. Achievement level results for the regions and subgroups are presented in Chapter 3. In Chapter 4, school and home contextual factors related to literacy development are the focus for presenting results of the 1998 NAEP assessment. Chapter 5 concludes this report with a look at public school results of the state-by-state assessments at grades 4 and 8.

In addition, several appendices are included that augment and support the information presented in these chapters. Appendix A provides an overview of the procedural aspects of the NAEP 1998 reading assessment. Appendix B provides the standard errors for all data presented throughout this report. Appendix C provides the sample texts for the released questions presented in the first chapter, and also includes additional questions and sample student responses. Appendix D presents 1998 state level results for additional subgroups not discussed in Chapter 5 and also provides 1992 and 1994 subgroup data for grade 4. Appendix E presents characteristics of individual states and jurisdictions that are drawn from non-NAEP sources.

INTRODUCTION

The act of reading, whether performed for pleasure or necessity, contributes greatly to the quality of our daily lives. In the course of an average day, a typical American adult needs to read for a variety of reasons in different situations. Days begin by reading the morning paper and proceed to the demands of reading in the workplace. Most types of employment demand some reading, whether it be a memo, a manual, or more complicated material.

Reading is also necessary for home and leisure activities. The ability to read instructions, recipes, catalogues, or schedules permits daily life to proceed more smoothly. And daily life is immeasurably enriched by reading for personal enjoyment or by reading a favorite story to a young child.

Beyond the spheres of work and home, the ability to read is essential to each citizen's effective participation in the affairs of his or her community, state, and nation. Reading and understanding accounts of current events at the local and national level are necessary to the full exercise of civic responsibility.

The importance of reading for all children, who will be the future adults of America, underlies the need to monitor student achievement in reading. While learning to read is the focus for early elementary school education, one's ability to read develops and acquires facility throughout the middle and secondary school years. It is this progress in learning to read and becoming better at reading that the National Assessment of Educational Progress (NAEP) surveys and reports.

Overview of the 1998 National Assessment of Educational Progress (NAEP)

Since being authorized by Congress in 1969, NAEP's mission has been to collect, analyze, and present reliable and valuable information about what American students know and can do. Both public and private school students in grades 4, 8, and 12 are sampled and assessed on a regular basis in core subject areas. In 1998, student performance in reading, writing, and civics was assessed. All NAEP assessments are based on content frameworks and are developed through a national consensus process that involves teachers, curriculum experts, parents, and members of the general public.

The 1998 NAEP reading assessment was the third assessment based on the *NAEP Reading Framework*, first adopted for the 1992 assessment.[1] It was also the largest reading assessment to date. In 1992 and 1994, the NAEP reading assessment was administered to national samples of fourth, eighth, and twelfth graders, and to samples of fourth graders in jurisdictions[2] that participated in the state-by-state assessment. In 1998, the assessment was expanded to provide state-by-state results on the reading achievement of both fourth and eighth graders. Across all three grades, nearly 500,000 students were assessed in the national and state samples.

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[1] National Assessment Governing Board. *Reading framework for the National Assessment of Educational Progress: 1992–1998.* Washington, DC: Author.

All assessed students in both the national and state samples received a test booklet that contained reading materials and questions. Most test booklets contained two reading passages; however, at grades 8 and 12, some booklets contained a single passage of greater length. While longer passages were accompanied by as many as 16 comprehension questions, typically 10 to 12 questions were to be answered about each passage. Questions were presented in both multiple-choice and open-ended formats. The open-ended questions included both short constructed-response questions requiring a one-or two-sentence answer and extended constructed-response questions requiring a more in-depth answer of a paragraph or more. The assessment time was 50 minutes, both for those students whose booklet contained two passages and for those whose booklet contained one longer passage.

The report that follows describes the results of the NAEP 1998 reading assessment. National results are presented for grades 4, 8, and 12; state-by-state results are presented for grades 4 and 8. In addition, this report compares student performance in 1998 with results from the 1994 and 1992 reading assessments. Comparisons of 1994 to 1992 were made throughout the NAEP 1994 reading report and therefore are not presented or discussed in this report.[3] Making comparisons across assessment years is possible because the assessments share a common set of reading tasks and reflect the same reading framework.

Behind all the tables and graphs in this report, there is a story or many stories. The main story tells how well American students in grades 4, 8, and 12 are able to read. This story is highlighted by information on contextual factors that affect reading development, such as how often students are asked to explain what they read at school and how often students talk about their studies at home. No single table tells the whole story, but taken together they compose a narrative of literacy as it is achieved and influenced. It is hoped that all the readers of this report — policymakers, parents, teachers, and concerned citizens — will find the information useful, and that the results reported here will inform discussions and decisions to help ensure the educational progress of our nation's students.

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[2] The term *jurisdictions* refers to the states, territories, and Department of Defense Education Activity Domestic (DDESS) and Overseas (DoDDs) schools that participated in the state-by-state assessment.

[3] Campbell, J.R., Donahue, P.L., Reese, C.M., & Phillips, G.W. (1996). *NAEP 1994 reading report card for the nation and the states.* Washington, DC: National Center for Education Statistics.

Framework for the 1992, 1994, and 1998 Assessments

The *NAEP Reading Framework*[4] provided the specific guidelines and the theoretical basis for developing the 1992, 1994, and 1998 reading assessments. The result of a national consensus effort, the *NAEP Reading Framework* reflects the ideas of many individuals involved and interested in reading education. This consensus effort was managed by the Council of Chief State School Officers (CCSSO) under the direction of the National Assessment Governing Board (NAGB).

Informed by current research and theories, the *NAEP Reading Framework* views reading as a dynamic interplay between and among the reader, the text content, and the context of the reading experience. In responding to text, each reader brings prior knowledge, previous reading experiences, reasons for reading, awareness of genre or text structure, and skills and strategies; in each transaction between reader and text, these elements are at play and are integral to the reading process.[5]

The framework specifies three purposes for reading to be assessed: **reading for literary experience, reading to gain information,** and **reading to perform a task.** All three purposes are assessed at grades 8 and 12; however, **reading to perform a task** is not assessed at grade 4. The framework also delineates four types of reading processes that characterize the way readers respond to text in their construction of meaning. These processes are referred to as "reading stances." The purposes for reading and the reading stances are more fully described in the following sections.

Reading Purposes. How a reader responds to text depends in part on the type of text being read and the purpose for reading it.[6] The purpose for reading and the expectations brought to the text may influence the comprehension process, determining what strategies and skills are deployed in the pursuit of meaning and the extent to which text content is integrated with prior knowledge.[7] In consequence, the purpose for reading engendered by different types of text and associated with different reading experiences may affect how and what a reader understands.

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[4] National Assessment Governing Board. *Reading framework for the National Assessment of Educational Progress: 1992–1998.* Washington, DC: Author.

[5] Anderson, R.C., & Pearson, P.D. (1984). A schema-theoretic view of basic processes in reading comprehension. In P.D. Pearson (Ed.), *Handbook of reading research* (pp. 255–292). New York: Longman.

Pressley, M. & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Ruddell, R.B. & Unrau, N.J. (1994). Reading as a meaning-construction process: The reader, the text, and the teacher. In R.B. Ruddell, M.R. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 864–894). Newark, DE: International Reading Association.

[6] Taylor, B. M. (1992). Text structure, comprehension, and recall. In S.J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (pp. 220–235). Newark, DE: International Reading Association.

The NAEP reading assessment measured three purposes for reading as specified in the framework. All reading passages administered to students participating in the assessment were representative of one of the three purposes. Students' abilities to read and understand were evaluated in terms of a single purpose for each reading passage. The three purposes for reading measured by the NAEP assessment are described in Figure i.1.

Figure i.1

Reading purposes

Reading for Literary Experience

Reading for literary experience entails the reading of various literary texts to enlarge our experience of human events and emotions, and to enhance both our appreciation of the world and how it is depicted through language. Literary texts used in the NAEP reading assessment included adventure stories, poetry, science fiction, and folktales.

Reading to Gain Information

When reading to gain information, readers are usually focused on a specific topic or point of reference. They are trying to understand and retain the text information. Informative texts used in the NAEP reading assessment included science articles, primary and secondary historical sources, sections of textbook chapters, essays, and a speech.

Reading to Perform a Task

Reading to perform a task involves reading various types of materials for the purpose of applying the information or directions to complete a specific task. As such, readers must focus on how they will actually use the information. The materials used to assess this purpose in the NAEP reading assessment included classified advertisements, directions for completing various projects, and a tax form.

Reading Stances. While responding to text, readers take different approaches in order to understand what is being read. The comprehension process typically involves changing stances, or orientations toward the text, with each stance contributing a somewhat different dimension to the reader's comprehension of it.[8] Questions in the NAEP reading assessment are designed to engage different stances toward the text by which students demonstrate their comprehension. These stances are not intended to represent a sequential routine of reading abilities nor are they considered hierarchical; rather, they describe reading processes that all readers use at any level of reading development.

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[7] Mathewson, G.C. (1994). Model of attitude influence upon reading and learning to read. In R.B. Ruddell, M.R. Ruddell, & H. Singer (Eds.), *Theoretical models and processes of reading* (pp. 1131–1161). Newark, DE: International Reading Association.

Pressley, M. & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Langer, J.A. (1993). *Approaches toward meaning in low- and high-rated readers* (Report No. 2-20). National Research Center on Literature Teaching and Learning. Washington, DC: Office of Educational Research and Improvement.

[8] Langer, J.A. (1990). The processes of understanding: Reading for literary and informative purposes. *Research in the Teaching of English, 24*(3), 229–259.

The four reading stances are described in Figure i.2. The percentages of questions by stance within each reading purpose are presented in Table i.1 on the following page. As both Initial Understanding and Developing an Interpretation questions focus on constructing meaning from the text, more so than on extending or evaluating text ideas, the table shows a combined percentage for these two stances as prescribed by the assessment framework.

Figure i.2

Reading stances

Initial Understanding:
preliminary consideration of the text as a whole

Readers are asked to consider the whole text in demonstrating an overall understanding of its meaning and function.

Developing an Interpretation:
discerning connections and relationships among ideas within the text

Readers are asked to build upon their initial impressions to develop a more thorough understanding of the text and the interrelationship of its parts.

Personal Reflection and Response:
relating personal knowledge to text ideas

Readers are asked to describe how ideas in the text confirm, contradict, or compare with prior knowledge and experiences.

Critical Stance:
standing apart from the text to consider it objectively

Readers are asked to consider how the text conveys information, expresses ideas or feelings, and communicates a message.

The Reading Assessment Instruments

The NAEP reading assessment reflects current research and perspectives on reading comprehension and its measurement. The development process for the assessment instruments involved a series of reviews by measurement experts, state officials, teachers, and reading researchers. All components of the assessment were evaluated for curricular relevance, developmental appropriateness, fairness concerns, and adherence to the framework and test specifications.

Reading passages in the NAEP assessment instruments are drawn from a variety of sources largely available to students in and out of school. These reading materials are considered representative of real-life reading experiences in that they are unabridged stories, articles, and documents. Although presented to

Table i.1

Distribution of questions by reading stances

	Purpose for Reading	Reading Stances		
		Initial Understanding & Developing an Interpretation	Personal Response	Critical Stance
Grade 4	Literary Experience	56%	14%	29%
	Gain Information	58%	21%	19%
	Perform a Task	*	*	*
	Total Assessment	57%	18%	24%
Grade 8	Literary Experience	55%	10%	34%
	Gain Information	58%	19%	23%
	Perform a Task	51%	12%	36%
	Total Assessment	55%	15%	30%
Grade 12	Literary Experience	59%	3%	37%
	Gain Information	53%	18%	29%
	Perform a Task	58%	6%	36%
	Total Assessment	56%	11%	33%

* Reading to Perform a Task was not assessed at Grade 4.

NOTE: Percentages may not add to 100 due to rounding.

Percentages represent proportion of questions within purpose for reading subscale or within total grade-level assessments.

students in test booklets, all reading materials are reproduced to replicate as closely as possible their original format and presentation.

Reading materials in the NAEP assessment instrument comprise either one 50-minute set or two 25-minute sets of passages and questions. The assessment includes both multiple-choice and constructed-response questions. In contrast to multiple-choice questions, constructed-response questions require students to write their own answer, and allow students to express and support their ideas in response to the text. By doing so, students demonstrate a range of abilities: describing interpretations, explaining personal reactions, generating conclusions, or supporting critical evaluations.[9]

The 1998 reading assessment comprised a total of 93 multiple-choice questions, 128 short constructed-response questions (rated using a two- or three-level scoring rubric), and 26 extended constructed-response questions (rated using a four-level scoring rubric). A good number of these questions and their corresponding reading materials were administered at two grade levels, either at both fourth and eighth grades or at both eighth and twelfth grades, to allow for cross-grade comparisons. The greater proportion of student response time was spent answering constructed-response questions: 66 percent at fourth grade, 74 percent at eighth grade, and 76 percent at twelfth grade. (The contribution of different question types to the NAEP reading scale is discussed in Appendix A.)

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[9] Dole, J.A., Duffy, G.G., Roehler, L.R., & Pearson, P.D. (1991). Moving from the old to the new: Research on reading comprehension instruction. *Review of Educational Research, 61*(2), 239–264.

Flood, J., & Lapp, D. (1994). Developing literary appreciation and literacy skills: A blueprint for success. *The Reading Teacher, 48*(1), 76–79.

Spires, H.A., Huntley-Johnson, L., & Huffman, L.E. (1993). Developing a critical stance toward text through reading, writing, and speaking. *Journal of Reading, 37*(2), 114–122.

Description of School and Student Samples

The NAEP 1998 reading assessment was conducted nationally at grades 4, 8, and 12, and state-by-state at grades 4 and 8. For both the national and state-by-state assessments, representative samples of public and nonpublic school students were selected through stratified random sampling procedures. The samples selected for each jurisdiction participating in the state-by-state assessment were separate from the national sample.

Thus, the national and jurisdictional results presented in this report are based on representative samples of students. Each selected school that participated in the assessment, and each student assessed, represents a portion of the population of interest. As a result, after adjusting for student and school nonresponses, the findings presented in this report pertain to all fourth, eighth, and twelfth graders in the nation and regions, and to all fourth and eighth graders in participating jurisdictions that met participation guidelines. (Appendix A contains information on sample sizes and participation rates for the national and state-by-state assessments.)

Reporting the Reading Assessment Results

The results of the NAEP reading assessment are presented as average scores on the NAEP composite reading scale and in terms of the percentage of students attaining NAEP reading achievement levels. The average scale score provides information on what students *know and can do*; the achievement level results indicate the degree to which students meet expectations of what they *should know and be able to do*.

Responses to the NAEP 1998 reading assessment questions were analyzed to determine the percentage of students responding correctly to each multiple-choice question and the percentage of students responding at each of the score levels for constructed-response questions. Results were summarized on the separate "purposes for reading" subscales. These subscales were, in turn, combined to form a single composite reading scale, which ranges from 0 to 500. This scale makes it possible to compare the average reading scale scores for groups of students within and across assessment years.

The composite reading scale was developed by weighting the separate purposes for reading subscales based on the relative importance of each purpose in the NAEP reading framework. The relative contribution of each reading purpose is presented in Table i.2. (A description of scaling procedures can be found in the forthcoming *NAEP 1998 Technical Report.*)

Table i.2

Weighting of the reading purpose subscales on the composite reading scale

	Literary Experience	To Gain Information	To Perform a Task
Grade 4	55%	45%	not assessed
Grade 8	40%	40%	20%
Grade 12	35%	45%	20%

In addition to the NAEP reading scale, results are reported using the reading achievement levels as authorized by the NAEP legislation and adopted by the National Assessment Governing Board (NAGB). The achievement levels are performance standards based on the collective judgments of experts about what students *should know and be able to do*. The levels were developed by a broadly representative panel that included teachers, education specialists, and members of the general public. For each grade tested, NAGB has adopted three achievement levels: *Basic*, *Proficient*, and *Advanced*. For reporting purposes, the achievement level cut scores for each grade are placed on the NAEP reading scale, resulting in four ranges: below *Basic*, *Basic*, *Proficient*, and *Advanced*.

The Setting of Achievement Levels

The 1988 NAEP legislation that created the National Assessment Governing Board directed the Board to identify "appropriate achievement goals...for each subject area" that NAEP measures.[10] The 1994 NAEP reauthorization reaffirmed many of the Board's statutory responsibilities, including "developing appropriate student performance standards for each age and grade in each subject area to be tested under the National Assessment."[11] In order to follow this directive and achieve the mandate of the 1988 statute "to improve the form and use of NAEP results," the Board undertook the development of student performance standards (called "achievement levels"). Since 1990, the Board has adopted achievement levels in mathematics, reading, U.S. history, world geography, and science, and is currently developing achievement levels in writing and civics.

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[10] Public Law 100-297. (1988). National Assessment of Educational Progress Improvement Act (20 USC 1221). Washington, DC.

[11] Public Law 103-382. (1994). Improving America's Schools Act (20 USC 9010). Washington, DC.

The Board defined three levels for each grade: *Basic*, *Proficient*, and *Advanced*. The *Basic* level denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade. The *Proficient* level represents solid academic performance. Students reaching this level demonstrate competency over challenging subject matter. The *Advanced* level signifies superior performance at a given grade. For each grade, the levels are cumulative; that is, abilities achieved at the *Proficient* level presume mastery of abilities associated with the *Basic* level, and attainment of the *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels. Figure i.3 presents the policy definitions of the achievement levels that apply across grades and subject areas. (Specific descriptions of reading achievement for the levels at each grade are presented in Chapter 1.) Adopting three levels of achievement for each grade signals the importance of looking at more than one standard of performance. The Board believes, however, that all students should reach the *Proficient* level; the *Basic* level is not the desired goal, but rather represents partial mastery that is a step toward *Proficient*.

Figure i.3

Achievement level policy definitions

Basic	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
Proficient	This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
Advanced	This level signifies superior performance.

The achievement levels in this report were adopted by the Board based on a standard-setting process designed and conducted under a contract with ACT. To develop these levels, ACT convened a cross section of educators and interested citizens from across the nation and asked them to judge what students should know and be able to do relative to a body of content reflected in the NAEP assessment framework for reading. This achievement level setting process was reviewed by an array of individuals including policymakers, representatives of professional organizations, teachers, parents, and other members of the general public. Prior to adopting these levels of student achievement, NAGB engaged a large number of persons to comment on the recommended levels and to review the results.

The results of the achievement level setting process, after NAGB approval, are a set of achievement level descriptions and a set of achievement level cut points on the 500-point NAEP scale. The cut points are the scores that define the boundaries between below *Basic*, *Basic*, *Proficient*, and *Advanced* performance at grades 4, 8, and 12. The Board established these reading achievement levels in 1992 based upon the reading content framework; these levels were used for the 1992, 1994, and 1998 reading assessments.

The Developmental Status of Achievement Levels

The 1994 NAEP reauthorization law requires that the achievement levels be used on a developmental basis until the Commissioner of Education Statistics determines that the achievement levels are "reasonable, valid, and informative to the public."[12] Until that determination is made, the law requires the Commissioner and the Board to state clearly the developmental status of the achievement levels in all NAEP reports.

In 1993, the first of several congressionally mandated evaluations of the achievement level setting process concluded that the procedures used to set the achievement levels were flawed and that the percentage of students at or above any particular achievement level cut point may be underestimated.[13] Others have critiqued these evaluations, asserting that the weight of the empirical evidence does not support such conclusions.[14]

In response to the evaluations and critiques, NAGB conducted an additional study of the 1992 reading achievement levels before deciding to use the 1992 reading achievement levels for reporting 1994 NAEP results.[15] When reviewing the findings of this study, the NAE Panel expressed concern about what it saw as a "confirmatory bias" in the study and about the inability of this study to

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[12] The Improving America's Schools Act of 1994 (20 USC 9010) requires that the Commissioner base his determination on a congressionally mandated evaluation by one or more nationally recognized evaluation organizations, such as the National Academy of Education or the National Academy of Science.

[13] United States General Accounting Office. (1993). *Education achievement standards: NAGB's approach yields misleading interpretations*, U.S. General Accounting Office Report to Congressional Requestors. Washington, DC: Author.

National Academy of Education. (1993). *Setting performance standards for achievement: A report of the National Academy of Education Panel on the evaluations of the NAEP Trial State Assessment: An evaluation of the 1992 achievement levels.* Stanford, CA: Author.

[14] Cizek, G. (1993). *Reactions to National Academy of Education report.* Washington, DC: National Assessment Governing Board.

Kane, M. (1993). *Comments on the NAE evaluation of the NAGB achievement levels.* Washington, DC: National Assessment Governing Board.

[15] American College Testing. (1995). *NAEP reading revisited: An evaluation of the 1992 achievement level descriptions.* Washington, DC: National Assessment Governing Board.

"address the panel's perception that the levels had been set too high."[16] In 1997, the NAE Panel summarized its concerns with interpreting NAEP results based on the achievement levels
as follows:

> *First, the potential instability of the levels may interfere with the accurate portrayal of trends. Second, the perception that few American students are attaining the higher standards we have set for them may deflect attention to the wrong aspects of education reform. The public has indicated its interest in benchmarking against international standards, yet it is noteworthy that when American students performed very well on a 1991 international reading assessment, these results were discounted because they were contradicted by poor performance against the possibly flawed NAEP reading achievement levels in the following year.*[17]

The NAE Panel report recommended "that the current achievement levels be abandoned by the end of the century and replaced by new standards...." The National Center for Education Statistics and the National Assessment Governing Board have sought and continue to seek new and better ways to set performance standards on NAEP. For example, NCES and NAGB jointly sponsored a national conference on standard setting in large-scale assessments, which explored many issues related to standard setting.[18] Although new directions were presented and discussed, a proven alternative to the current process has not yet been identified. The Commissioner of Education Statistics and the Board continue to call on the research community to assist in finding ways to improve standard setting for reporting NAEP results.

The most recent congressionally mandated evaluation conducted by the National Academy of Sciences (NAS) relied on prior studies of achievement levels, rather than carrying out new evaluations, on the grounds that the process has not changed substantially since the initial problems were identified. Instead, the NAS Panel studied the development of the 1996 science achievement levels. The NAS Panel basically concurred with earlier congressionally mandated studies. The Panel concluded that "NAEP's current achievement level setting procedures remain fundamentally flawed. The judgment tasks are difficult and confusing; raters' judgments of different item types are internally inconsistent; appropriate validity evidence for the cut scores is lacking; and the process has produced unreasonable results."[19]

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[16] National Academy of Education. (1996). Reading achievement levels. In *Quality and utility: The 1994 Trial State Assessment in reading. The fourth report of the National Academy of Education Panel on the evaluation of the NAEP Trial State Assessment.* Stanford, CA: Author.

[17] National Academy of Education. (1997). *Assessment in transition: Monitoring the nation's educational progress* (p. 99). Mountain View, CA: Author.

[18] National Assessment Governing Board and National Center for Education Statistics. (1995). *Proceedings of the Joint conference on Standard Setting for Large-Scale Assessments of the National Assessment Governing Board (NAGB) and the National Center for Education Statistics (NCES).* Washington, DC: Government Printing Office.

The NAS Panel accepted the continuing use of achievement levels in reporting NAEP results only on a developmental basis, until such time as better procedures can be developed. Specifically, the NAS Panel concluded that "...tracking changes in the percentages of students performing at or above those cut scores (or in fact, any selected cut scores) can be of use in describing changes in student performance over time."[20]

The National Assessment Governing Board urges all who are concerned about student performance levels to recognize that the use of these achievement levels is a developing process and is subject to various interpretations. The Board and the Commissioner believe that the achievement levels are useful for reporting on trends in the educational achievement of students in the United States. In fact, achievement level results have been used in reports by the President of the United States, the Secretary of Education, state governors, legislators, and members of Congress. The National Education Goals Panel and government leaders in the nation and in more than 40 states use these results in their annual reports.

However, based on the congressionally mandated evaluations so far, the Commissioner agrees with the National Academy's recommendation that caution needs to be exercised in the use of the current achievement levels. Therefore, the Commissioner concludes that these achievement levels should continue to be considered developmental and should continue to be interpreted and used with caution.

Interpreting NAEP Results

The average scores and percentages presented in this report are estimates because they are based on samples rather than the entire population(s). As such, the results are subject to a measure of uncertainty, reflected in the standard errors of the estimates. The standard errors for the estimated scale scores and percentages throughout this report are provided in Appendix B.

The differences between scale scores and percentages discussed in the following chapters take into account the standard errors associated with the estimates. The comparisons are based on statistical tests that consider both the magnitude of the difference between the group average scores or percentages and the standard errors of these statistics. Throughout this report, differences are noted only when they are significant from a statistical perspective. This means that observed differences are unlikely to be due to chance factors associated with sampling variability. The term significant is not intended to imply a judgment about the absolute magnitude of the educational relevance of the differences. It is intended to identify statistically dependable population differences to help focus subsequent dialogue among policy makers, educators, and the public. All differences reported are significant at the .05 level with appropriate adjustments for multiple comparisons.

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[19] Pellegrino, J.W., Jones, L.R., and Mitchell, K.J. (Eds.) (1998). *Grading the nation's report card: evaluating NAEP and transforming the assessment of educational progress.* Committee on the Evaluation of National Assessments of Educational Progress, Board on Testing and Assessment, Commission on Behavioral and Social Sciences and Education, National Research Council. (p. 182). Washington, DC: National Academy Press.

[20] *Ibid.*, page 176.

Cautions in Interpretations

The reader is cautioned against using the NAEP results to make simple causal inferences related to subgroup performance or to the effectiveness of public and nonpublic schools, or to state educational systems. A relationship that exists between performance and another variable does not reveal its underlying cause, which may be influenced by a number of other variables. Differences in reading performance may reflect a range of socioeconomic and educational factors not discussed in this report or addressed by the NAEP assessment program. Similarly, differences between public and nonpublic schools may be better understood by considering such factors as composition of the student body and parental involvement. Finally, differences in reading performance among states and jurisdictions may reflect not only the effectiveness of education programs, but also the challenges posed by economic constraints and student demographic characteristics.

CHAPTER 1

Average Scale Score and Achievement Level Results for the Nation

Overview

This chapter presents the national results of the NAEP 1998 reading assessment. The performance of students in grades 4, 8, and 12 is described by their average scores on the NAEP reading composite scale, which ranges from 0 to 500. Student performance is also described in terms of the percentages of students who attained each of the three reading achievement levels, *Basic*, *Proficient*, and *Advanced*. National results of the NAEP 1998 reading assessment are compared with results from the 1994 and 1992 reading assessments. This comparison is possible because the assessments share a common set of reading tasks and reflect the same reading framework.

To provide a context for better understanding student performance and assessment results, this chapter includes sample questions and student responses from the 1998 assessment. Three sample questions are provided for each grade to show what students were asked to do and how they responded. These questions are accompanied by actual student responses to exemplify the range of reading abilities demonstrated by students. Each sample question is accompanied by the overall percentage of students who answered successfully, as well as the percentage of students who answered successfully within the achievement level score ranges on the NAEP reading composite scale.

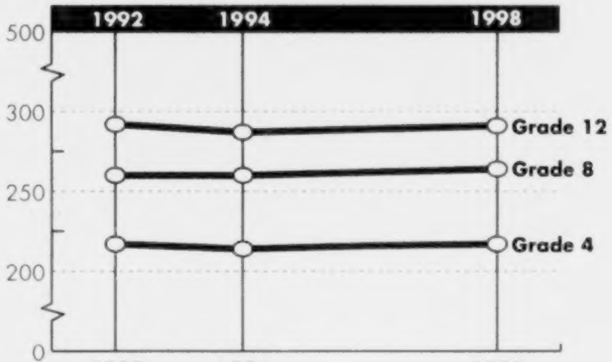
This chapter concludes with maps of selected item descriptions. The maps provide a more inclusive overview of the types of questions likely to be answered by students scoring at different levels on the NAEP composite scale. As such, item maps highlight the reading abilities associated with answering individual questions from the NAEP assessment.

Average Scale Score Results for the Nation

The overall results of student performance on the NAEP 1998 assessment in reading are encouraging: Average scale scores for the nation showed increases at all three grades since the last reading assessment in 1994. Figure 1.1 presents the average reading scale scores of fourth-, eighth-, and twelfth-grade students attending both public and nonpublic schools. Results are presented for the 1992, 1994, and 1998 reading assessments.

Figure 1.1

Average reading scale scores for the nation: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	292	287	291†
Grade 8	260	260	264*†
Grade 4	217	214	217†

* Indicates that the average scale score in 1998 is significantly different from that in 1992.

† Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

- At fourth grade, student performance in 1998 resulted in a higher average scale score than in 1994.
- At eighth grade, student performance in 1998 resulted in an average scale score that was higher than in both 1994 and 1992.
- At twelfth grade, student performance in 1998 resulted in a higher average scale score than in 1994.

A broader and more delineated view of reading ability demonstrated by students on the NAEP assessment can be obtained by looking at scale scores attained by students across the performance distribution. Table 1.1 shows the reading scale scores for students at the 10th, 25th, 50th, 75th, and 90th percentiles at each grade. An examination of these data can provide a picture of how students with lower or higher reading ability performed in relation to the national average and how these students compare to their counterparts in the 1992 and 1994 reading assessments.

Table 1.1

Reading scale score percentiles: 1992, 1994, and 1998

	Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
Grade 4						
1998	217+	167+	193+	220	244	263
1994	214	159	189	219	243	263
1992	217	170	194	219	242	261
Grade 8						
1998	264*+	217*+	242*+	267*+	288*	305
1994	260	211	236	262	286	305
1992	260	213	237	262	285	305
Grade 12						
1998	291+	242*	268	293+	317+	337*+
1994	287	239	264	290	313	332
1992	292	249	271	294	315	333

* Indicates that the scale score in 1998 is significantly different from that in 1992

+ Indicates that the scale score in 1998 is significantly different from that in 1994

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

While national results in 1998 show a higher average score at all three grades, these increases were not observed consistently across the performance distribution; different patterns were observed at each grade.

- At fourth grade, the 1998 average national score of 217 was higher than in 1994. The increase is evident primarily among lower-performing students. Only the scores at the 10th and 25th percentiles were higher in 1998 than in 1994. Compared to 1992 results, there were no significant changes at any percentiles.
- At eighth grade, the average national score of 264 was higher than in 1994 and 1992. The increase in 1998 compared to 1994 and 1992 is evident for students in the lower and middle levels of performance. The 10th, 25th, and 50th percentiles were higher in 1998 than in both previous assessments. The 75th percentile in 1998 was higher than in 1992. Performance at the 90th percentile remained unchanged from the previous two assessments.

- At the twelfth grade, the score increase between 1994 and 1998 is evident in the middle and upper ranges of student performance. Scores were higher in 1998 than in 1994 at the 50th, 75th, and 90th percentiles. The 10th and 25th percentiles also appeared higher than in 1994; however, these latter two differences were not statistically significant. As noted earlier, there was no apparent difference between 1998 and 1992 in overall average scores for the nation. When examined more closely, there is some evidence of compensating changes among high- and low-performing students. Performance in 1998 was higher than in 1992 among the best-performing students, but remains lower among poorer-performing students. More specifically, at the high end, the 90th percentile in 1998 was higher than 1992. Among lower-performing students, however, the 10th percentile was lower in 1998 than in 1992.

Achievement Level Results for the Nation

The results of student performance are not only reported using average and percentile scores on the NAEP reading scale, but also using reading achievement levels as authorized by the NAEP legislation and as adopted by the National Assessment Governing Board.[1] The achievement levels are performance standards adopted by the Board, based on the collective judgments of experts about what students should be expected to know and to be able to do in terms of the NAEP reading framework. Viewing students' performance from this perspective provides some insight into the adequacy of students' knowledge and skills and the extent to which they achieved expected levels of performance.

The Board reviewed and adopted the recommended achievement levels in 1992, which were derived from the judgments of a broadly representative panel that included teachers, education specialists, and members of the general public. For each grade assessed, the Board has adopted three achievement levels: *Basic*, *Proficient*, and *Advanced*. For reporting purposes, the achievement level cut scores for each grade are placed on the NAEP reading scale resulting in four ranges: the range below *Basic*, *Basic*, *Proficient*, and *Advanced*. Figure 1.2 presents the specific descriptions of reading achievement for the levels at each grade.

The NAEP legislation requires that achievement levels be "used on a developmental basis until the Commissioner of Education Statistics determines . . . that such levels are reasonable, valid, and informative to the public." A discussion of the developmental status of achievement levels may be found in the introduction to this report (pages 10–12).

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[1] The Improving America's Schools Act of 1994 (20 USC 9010) requires that the National Assessment Governing Board develop "appropriate student performance levels" for reporting NAEP results.

Figure 1.2

Reading achievement levels

Grade 4	**Basic (208)**	Fourth-grade students performing at the Basic level should demonstrate an understanding of the overall meaning of what they read. When reading text appropriate for fourth graders, they should be able to make relatively obvious connections between the text and their own experiences and extend the ideas in the text by making simple inferences.
	Proficient (238)	Fourth-grade students performing at the Proficient level should be able to demonstrate an overall understanding of the text, providing inferential as well as literal information. When reading text appropriate to fourth grade, they should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. The connection between the text and what the student infers should be clear.
	Advanced (268)	Fourth-grade students performing at the Advanced level should be able to generalize about topics in the reading selection and demonstrate an awareness of how authors compose and use literary devices. When reading text appropriate to fourth grade, they should be able to judge text critically and, in general, give thorough answers that indicate careful thought.
Grade 8	**Basic (243)**	Eighth-grade students performing at the Basic level should demonstrate a literal understanding of what they read and be able to make some interpretations. When reading text appropriate to eighth grade, they should be able to identify specific aspects of the text that reflect overall meaning, extend the ideas in the text by making simple inferences, recognize and relate interpretations and connections among ideas in the text to personal experience, and draw conclusions based on the text.
	Proficient (281)	Eighth-grade students performing at the Proficient level should be able to show an overall understanding of the text, including inferential as well as literal information. When reading text appropriate to eighth grade, they should be able to extend the ideas in the text by making clear inferences from it, by drawing conclusions, and by making connections to their own experiences – including other reading experiences. Proficient eighth graders should be able to identify some of the devices authors use in composing text.
	Advanced (323)	Eighth-grade students performing at the Advanced level should be able to describe the more abstract themes and ideas of the overall text. When reading text appropriate to eighth grade, they should be able to analyze both meaning and form and support their analyses explicitly with examples from the text; they should be able to extend text information by relating it to their experiences and to world events. At this level, student responses should be thorough, thoughtful, and extensive.
Grade 12	**Basic (265)**	Twelfth-grade students performing at the Basic level should be able to demonstrate an overall understanding and make some interpretations of the text. When reading text appropriate to twelfth grade, they should be able to identify and relate aspects of the text to its overall meaning, extend the ideas in the text by making simple inferences, recognize interpretations, make connections among and relate ideas in the text to their personal experiences, and draw conclusions. They should be able to identify elements of an author's style.
	Proficient (302)	Twelfth-grade students performing at the Proficient level should be able to show an overall understanding of the text which includes inferential as well as literal information. When reading text appropriate to twelfth grade, they should be able to extend the ideas of the text by making inferences, drawing conclusions, and making connections to their own personal experiences and other readings. Connections between inferences and the text should be clear, even when implicit. These students should be able to analyze the author's use of literary devices.
	Advanced (346)	Twelfth-grade students performing at the Advanced level should be able to describe more abstract themes and ideas in the overall text. When reading text appropriate to twelfth grade, they should be able to analyze both the meaning and the form of the text and explicitly support their analyses with specific examples from the text. They should be able to extend the information from the text by relating it to their experiences and to the world. Their responses should be thorough, thoughtful, and extensive.

Achievement level results for the nation's fourth-, eighth-, and twelfth-grade students are presented in Table 1.2 and Figure 1.3. The percentages of students at or above each of the levels are presented in Table 1.2. Figure 1.3 also shows achievement level results, but in terms of the percentages of students within each achievement level interval. In reading Table 1.2, it is necessary to keep in mind that the levels are cumulative: Included among students who are considered to be at or above *Basic* are those who may have also achieved the *Proficient* and *Advanced* levels of performance, and included among students who are considered to be at or above *Proficient* are those who may have attained the *Advanced* level of performance. For example, Table 1.2 shows that in 1998

Table 1.2

Percentage of students at or above the reading achievement levels for the nation: 1992, 1994, and 1998

	Nation			
	Below Basic	**At or above Basic**	**At or above Proficient**	**Advanced**
	Grade 4			
1998	38	62	31	7
1994	40	60	30	7
1992	38	62	29	6
	Grade 8			
1998	26*+	74*+	33*+	3
1994	30	70	30	3
1992	31	69	29	3
	Grade 12			
1998	23*+	77*+	40+	6*+
1994	25	75	36	4
1992	20	80	40	4

* Indicates that the percentage in 1998 is significantly different from that in 1992.

+ Indicates that the percentage in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

the percentage of fourth-grade students at or above *Basic* is 62 percent. The 62 percent includes not only students at the *Basic* level, but also those students who performed at the *Proficient* and *Advanced* levels.

As shown in Table 1.2, 62 percent of fourth graders, 74 percent of eighth graders, and 77 percent of twelfth graders were at or above the *Basic* level in 1998. Performance at or above the *Proficient* level — the achievement level identified by NAGB as the level that all students should reach — was achieved by 31 percent of students at grade 4, 33 percent of students at grade 8, and 40 percent of students at grade 12. The highest level of performance, *Advanced*, was attained in 1998 by 7 percent of fourth graders, 3 percent of eighth graders, and 6 percent of twelfth graders.

Viewed across assessment years, the patterns of student achievement vary somewhat from grade to grade. At grade 4, the percentages of students at or above each of the achievement levels remained relatively stable: The percentages in 1998 showed no statistically significant changes from 1994 and 1992. At grade 8, performance improved over that observed in 1994 and 1992 for two of the three levels. The percentages of students at or above *Basic* and at or above *Proficient* were both higher in 1998 than in either 1994 or 1992. At grade 12, student performance in 1998 was up at all three levels compared to 1994. Compared to 1992, however, the performance of 1998 twelfth graders was somewhat mixed: Fewer twelfth graders were at or above the *Basic* level, about the same percentage was at or above the *Proficient* level, and a greater percentage of students was at the *Advanced* level.

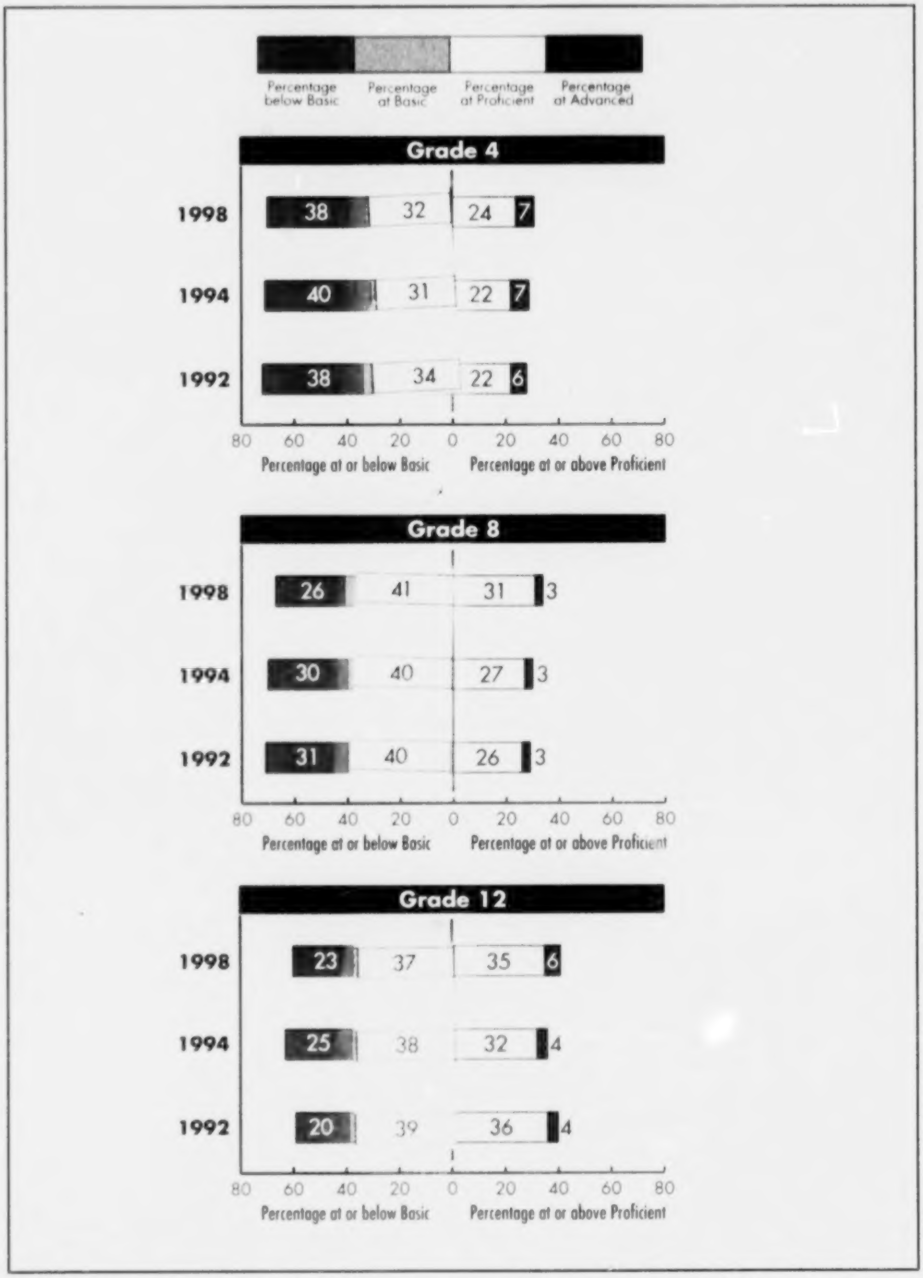
The results reported above can be further understood by examining Figure 1.3. This figure shows achievement level results; however, it presents the percentage of students who fall within the range for each of the achievement levels.

Figure 1.3 makes it clear that gains among eighth graders in the percentage of students at or above *Proficient* have not included gains in the percentage of students attaining the highest achievement level, *Advanced*. Although more eighth graders attained at least the *Proficient* level in 1998 than in 1994 or in 1992, gains at the highest level of performance have not been observed. In fact, the pattern of achievement level results is consistent with the pattern of scale score results presented by percentiles in Table 1.1, where increased scores were observed for all eighth graders except among higher performing students at the 90th percentile.

Among twelfth graders, the percentage of students at or above *Proficient* in 1998 increased compared to 1994. The percentage of twelfth graders at the *Advanced* level in 1998 increased in comparison to 1994 and 1992. Once again, a parallel can be drawn with the scale scores presented by percentiles in Table 1.1, where twelfth graders at the 50th percentile and above showed gains in

Figure 1.3

Percentage of students within each achievement level range for the nation: 1992, 1994, and 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

performance since 1994. It should also be noted that the lower scale score in 1998 compared to that in 1992 for lower-performing twelfth graders at the 10th percentile also was reflected in the achievement level results where the percentage of students below *Basic* was higher in 1998 than in 1992.

Sample Assessment Questions and Student Responses

The following pages present sample questions and student responses that portray student performance on the 1998 NAEP reading assessment. For each grade, three questions were selected to exemplify the range of reading abilities demonstrated by students. The reading passages that accompanied these questions are presented in Appendix C.

A combination of multiple choice, short constructed-response, and extended constructed-response questions is included. For each question, the reading purpose and reading stance being assessed are indicated. The correct answer is indicated for multiple-choice questions by a star (★). For constructed-response questions, a summary of the scoring criteria used to rate students' responses is provided. Actual student responses have been reproduced from assessment test booklets to illustrate representative answers that demonstrated at least adequate comprehension. The rating assigned to each sample response is indicated.

The tables in this section present two types of percentages for each sample question: (1) the overall percentage of students who answered successfully, and (2) the percentage of students who answered successfully within a specific score range on the NAEP reading composite scale. The score ranges correspond to the three achievement level intervals — *Basic*, *Proficient*, and *Advanced*. Because of the small number of eighth graders who attained the *Advanced* level, percentages for the scale score ranges corresponding to *Advanced* cannot be reliably reported for grade 8 and thus are not presented. (Sample size criteria for reporting assessment results are described in Appendix A.) It should be noted that the overall percentage of students shown in these tables includes students who were below *Basic*, as well as students whose performance fell within the three achievement level ranges.

Informative Article:

Blue Crabs

"Blue Crabs" is an informational passage describing the experiences of hunting for and catching blue crabs. The author incorporates information about the crabs' appearance, habits, habitats, and survival techniques with a description of what it is like to hunt for them.

Questions:

Why does a blue crab hide after molting?

Reading Purpose: To Gain Information **Reading Stance:** Developing an Interpretation

Responses to this question were scored according to a two-level rubric as Unacceptable or Acceptable

Table 1.3

Grade 4	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
69	73	88	94

*NAEP Reading composite scale range

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment

Responses scored Acceptable demonstrated understanding of explicitly stated information by indicating that blue crabs are vulnerable to attack after molting because they no longer have their protective external skeleton.

Sample Acceptable Response:

So that a preditor does not eat him while he is growing back a new shell.

The author of the article helps you to learn about blue crabs by

- **A.** explaining why they are an endangered species
- **B.** comparing them to other arthropods
- **C.** discussing their place in the food chain
- ★ **D.** providing details about their unique characteristics

Reading Purpose: To Gain Information **Reading Stance:** Critical Stance

Table 1.4

Grade 4	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
56	57	79	94

* NAEP Reading composite scale range

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Write a paragraph telling the major things you learned about blue crabs.

Reading Purpose: To Gain Information **Reading Stance:** Developing an Interpretation

Responses to this question were scored according to a four-level rubric as Unsatisfactory, Partial, Essential, or Extensive

Table 1.5

Grade 4	Percentage "Essential" or better within achievement level intervals		
Overall percentage "Essential" or better	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
43	44	66	82

* NAEP Reading composite scale range

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Responses scored Essential demonstrated restricted but appropriate understanding of one or two of the major characteristics of blue crabs as presented in the article.

Responses scored Extensive demonstrated a more thorough understanding of the article by providing substantial information on more than two of the major characteristics of blue crabs as presented in the article.

Sample Essential Response:

I leared that blue crabs
live in the shallow waters of
marsh and that when they
hatched they are ase
tiny ase a little speck of
dust

Sample Extensive Response:

I learned that blue crabs are verry strong. They can make a painful pinch. They have outstreched claws. They are arthropods. Blue Crabs belong to a group of crustaceans. There shell's are strong armor. I learned that molting means getting rid of a shell. As Blue Crabs get older they move into shallower waters. Predator's are raccoons, alligators, and people. Crabs can loose a leg and grow a new one

Sample Questions and Student Responses - Grade 8

Literary Article:

Gary Soto: A Fire in My Hands

"Gary Soto: A Fire in My Hands" is a literary passage describing the life and work of the Mexican-American poet. The passage presents entire poems and excerpts of Soto's work within the context of his life.

Questions:

In the poem "Finding a Lucky Number," Gary Soto contrasts

A. dogs and squirrels
★ **B.** present youth and future aging
C. Indian summer and the coming year
D. eating candy and a healthy diet

Reading Purpose: Literary Experience **Reading Stance:** Developing an Interpretation

Table 1.6

Grade 8	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
60	56	80	**

* NAEP Reading composite scale range
** Sample size insufficient to permit reliable estimate
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment

Write down in your own words some of the images from the poems that linger in your mind.

Reading Purpose: To Gain Information **Reading Stance:** Initial Understanding

Responses to this question were scored according to a two-level rubric as Unacceptable or Acceptable

Table 1.7

Grade 8	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
57	55	73	**

* NAEP Reading composite scale range.

** Sample size insufficient to permit reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Responses scored Acceptable demonstrated at least an initial understanding of Soto's poetry by providing an image or sensory detail from one of the poems presented in the article.

Sample Acceptable Response:

I remember reading about images of an orange looking like a fireball and black beautiful hair. I remember a chocolate for an orange and a nickel.

If you had to select one poem or excerpt to use to introduce your friends to Gary Soto's work, which selection would you choose? Explain why you would choose this selection over the others.

Reading Purpose: Literary Experience **Reading Stance:** Personal Response

Responses to this question were scored according to a four-level rubric as Unsatisfactory, Partial, Essential, or Extensive

Table 1.8

Grade 8	Percentage "Essential" or better within achievement level intervals		
Overall percentage "Essential" or better	**Basic 243-280***	**Proficient 281-322***	**Advanced 323 and above***
15	12	23	**

* NAEP Reading composite scale range.

** Sample size insufficient to permit reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Responses scored Essential demonstrated appropriate understanding of at least one of the poems presented in the article by selecting a poem and providing an explanation for choosing that poem.

Responses scored Extensive demonstrated more complete understanding of Gary Soto's poetry by selecting a poem and providing an explanation that contrasts the selected poem to the other poems in the article.

Sample Essential Response:

I would select "Finding a Lucky Number" because all of my friends are scared of old age, and I agree with them. After reading this poem it helped me over come my fear, so I think this poem would be an excellent influence on my friends.

Sample Extensive Response:

If I had to select one poem to introduce my friends to Gary Soto it would be "Oranges." "Oranges" had both sadness and contentment in it. The other poems were all happy. I enjoyed the mixed emotions of "Oranges" and I believe my friends would enjoy them too. The sadness in Oranges was the narrator's inability to pay for the candy bar. He then found contentment in knowing that the woman at the counter understood his predictament and helped him with it. The narrator also found contentment in the happiness he saw in the girl's face as she recieved the chocolate he had given her.

Task Document:

1040EZ Tax Form

The "1040EZ Tax Form" provides students with an actual tax document and with instructions on how to fill it out. After responding to questions about organization and procedures, the students are asked to complete the actual tax form.

Questions:

The purpose of the tax table is to help you determine

A. your gross income
★ **B.** the amount of tax you owe
C. your net earnings
D. your allowable deductions

Reading Purpose: To Perform a Task **Reading Stance:** Initial Understanding

Table 1.9

Grade 12	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
64	59	84	92

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Why is it important that you file your tax return before April 16?

Reading Purpose: To Perform a Task **Reading Stance:** Developing an Interpretation

Responses to this question were scored according to a two-level rubric as Unacceptable or Acceptable

Table 1.10

Grade 12	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	**Basic 265-301***	**Proficient 302-345***	**Advanced 346 and above***
57	53	72	76

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Responses scored Acceptable demonstrated understanding of explicitly stated information by providing a reason for submitting a tax return by April 16 as presented in the instructions.

Sample Acceptable Response:

So you aren't Charged interest
or a late payment penalty

List two mistakes that you could make in completing your tax return that might delay its processing.

Reading Purpose: To Perform a Task **Reading Stance:** Critical Stance

Responses to this question were scored according to a two-level rubric as Unacceptable or Acceptable

Table 1.11

Grade 12	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
37	36	48	57

* NAEP Reading composite scale range

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment

Responses scored Acceptable demonstrated a critical evaluation of the tax form directions by providing two errors that could cause a delay in processing.

Sample Acceptable Response:

forgeting to sign it, and forgeting to correct the address label if there were any errors, are two mistakes that you could make that might delay its processing

Item Maps

To better illustrate the NAEP reading scale, questions from the assessment are mapped onto the 0-to-500 scale at each grade.[2] These item maps are visual representations of the reading abilities demonstrated by students performing at different score levels along the NAEP reading composite scale. The maps contain descriptions of the aspect of reading comprehension demonstrated by answering a particular question. These descriptions take into consideration the specific reading skills or ability that the individual item was developed to assess and, in the case of constructed-response questions, the criteria used for scoring student responses. An examination of the descriptions provides some insight into the range of comprehension processes demonstrated by students at different score levels.

In considering the information provided by the item maps, it is important to recognize that these descriptions are based on comprehension questions that were answered about specific passages. It is possible that questions intended to assess the same aspect of comprehension, when asked about different passages, would map at different points on the scale. In fact, one NAEP study found that even identically worded questions function differently (i.e., easier or harder) when associated with different passages, suggesting that the difficulty of a question resided not only in the question itself but also in the interaction of the question with a particular passage.[3]

Figures 1.4, 1.5, and 1.6 present item maps for grades 4, 8, and 12, respectively. Multiple-choice questions are shown in italic type; constructed-response questions are in regular type. The scale score ranges for the reading achievement levels are also indicated on each item map. The maps identify where individual comprehension questions were answered successfully by at least 65 percent of the students at that grade for constructed-response questions, or by at least 74 percent of the students at that grade for multiple-choice questions. For each question indicated on the maps, students who scored above the scale point had a higher probability of successfully answering the question, and students who scored below the scale point had a lower probability of successfully answering the question.

An example of how to interpret the item maps may be helpful. In Figure 1.4, which shows the mapping of selected grade 4 assessment questions, a multiple-choice question that requires students to identify the major topic of an informative article maps at 226 on the scale. This means that fourth-grade students with an average scale score of 226 or more are likely to answer this question correctly—that is, they have at least a 74 percent chance of doing so. Put slightly differently, this question is answered correctly by at least 74 out of every 100 students scoring at or above the 226 scale-score level. This does not mean that students at or above the 226 score level always answer the question correctly; nor does it mean that students below the 226 scale score always answer it incorrectly. Rather, students have a higher or lower probability of successfully answering the question depending on their overall ability as measured by the NAEP scale.

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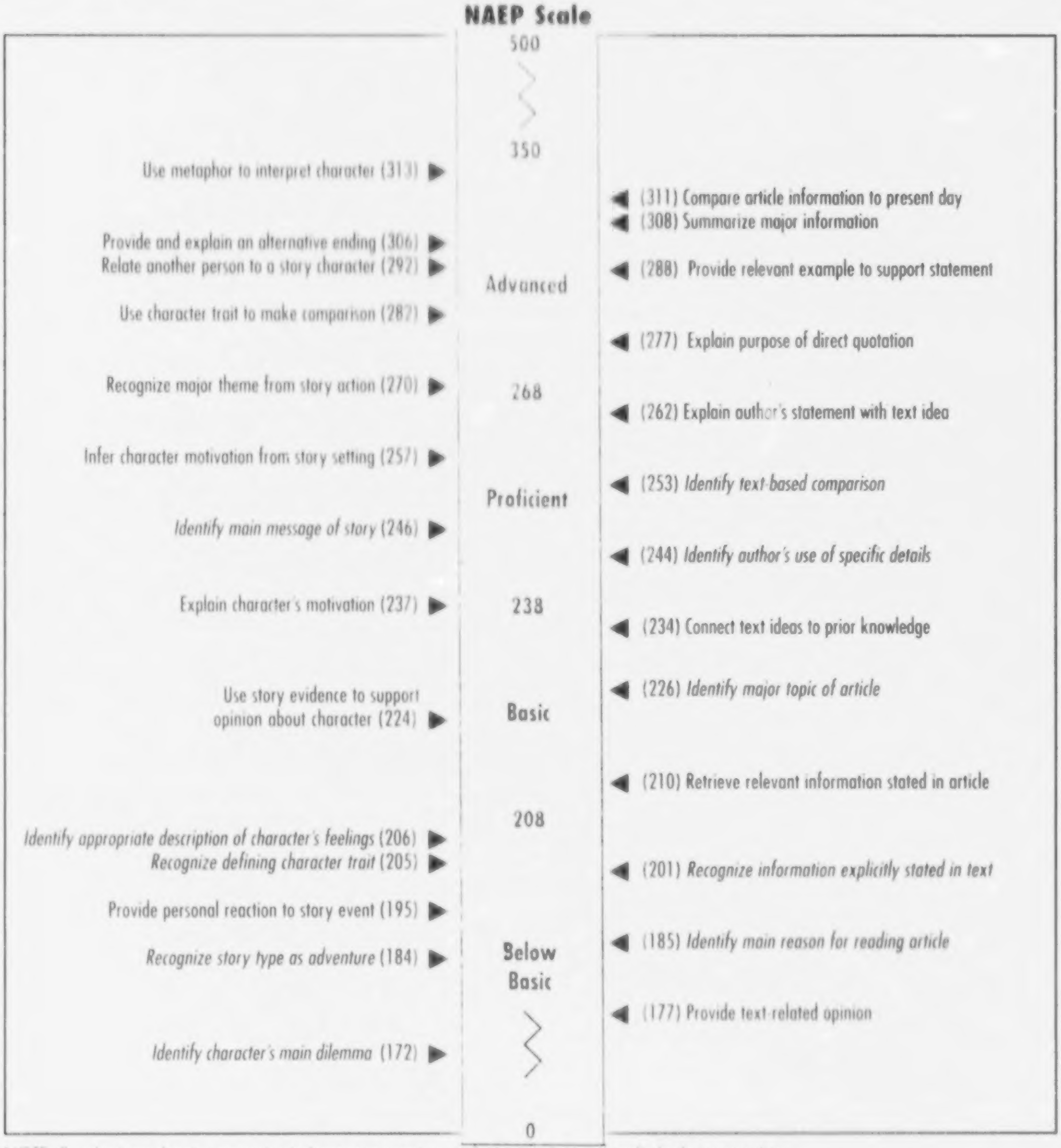
[2] Details on the procedures used to develop item maps will be provided in the forthcoming *NAEP 1998 Technical Report.*

[3] Campbell, J.R. & Donahue, P.L. (1997). *Students selecting stories: The effects of choice in reading assessment.* Washington, DC: National Center for Education Statistics.

The careful reader may observe that cross-grade items (i.e., items administered at more than one grade) may map at different points at the different grades. This is due to technical features of the analysis underlying item mapping as explained on pages 139 to 141 in Appendix A.

Figure 1.4

Map of selected item descriptions on the NAEP reading scale for grade 4



NOTE: Regular type denotes a constructed-response question. Italic type indicates a multiple-choice question.

Each grade 4 reading question was mapped onto the NAEP 0-to-500 reading scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for reading achievement levels are referenced on the map. [SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.]

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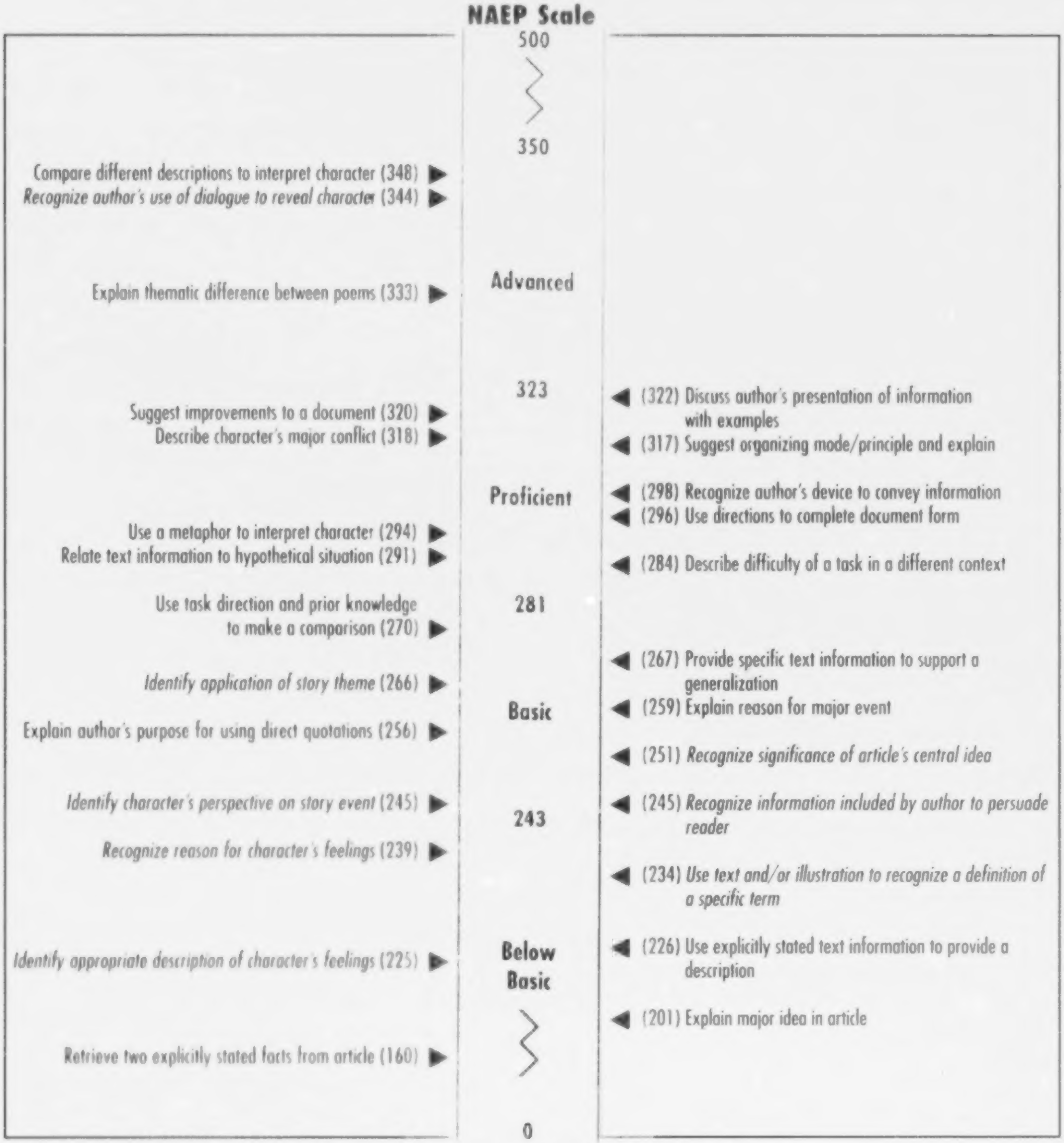
Figure 1.5

Map of selected item descriptions on the NAEP reading scale for grade 8

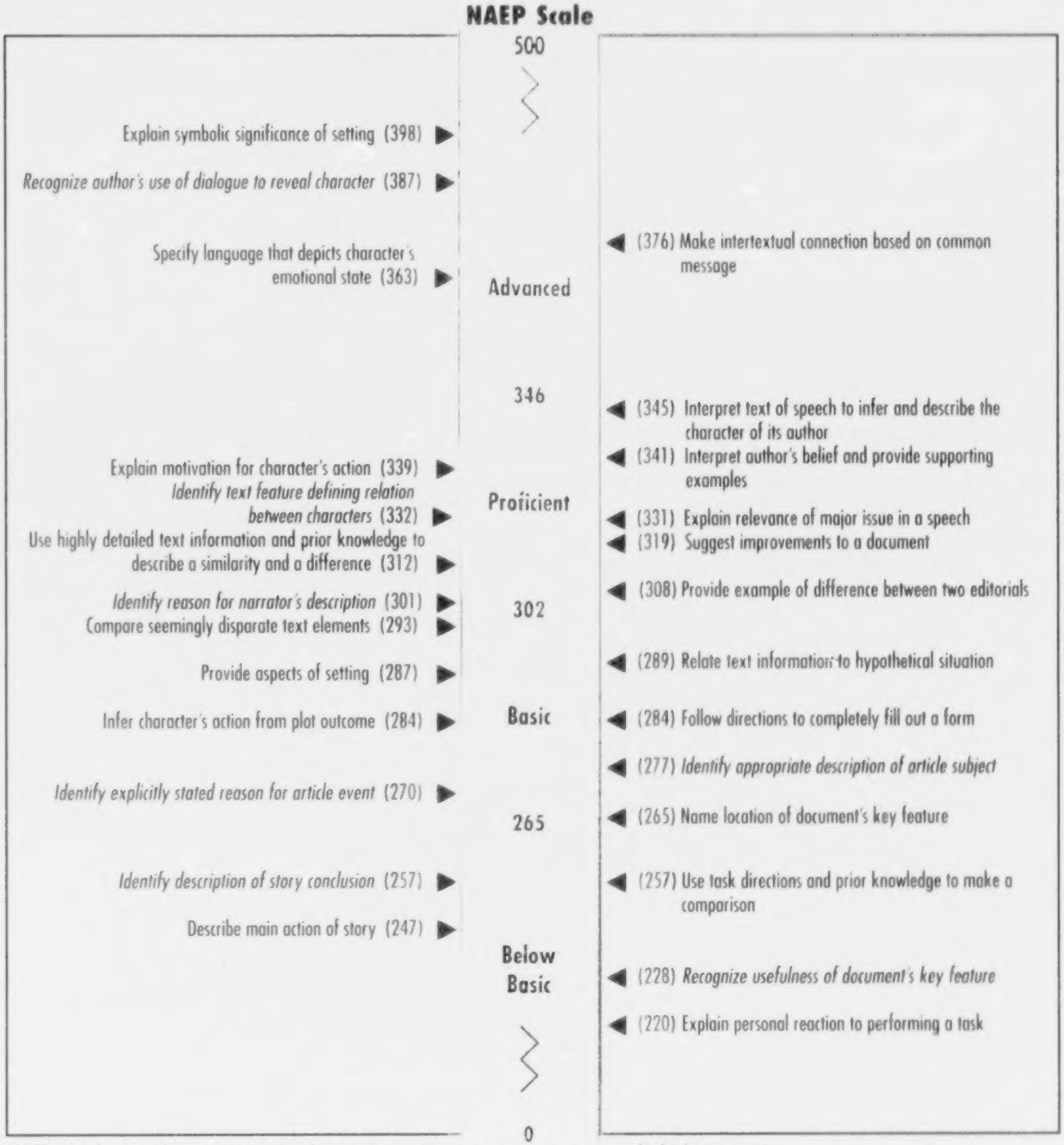


NOTE: Regular type denotes a constructed-response question. *Italic type indicates a multiple-choice question.*

Each grade 8 reading question was mapped onto the NAEP 0-to-500 reading scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for reading achievement levels are referenced on the map. [SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.]

Figure 1.6

Map of selected item descriptions on the NAEP reading scale for grade 12


NAEP Scale
500
Explain symbolic significance of setting (398)
Recognize author's use of dialogue to reveal character (387)
(376) Make intertextual connection based on common message
Specify language that depicts character's emotional state (363)
Advanced
346
(345) Interpret text of speech to infer and describe the character of its author
(341) Interpret author's belief and provide supporting examples
Explain motivation for character's action (339)
Identify text feature defining relation between characters (332)
Proficient
(331) Explain relevance of major issue in a speech
(319) Suggest improvements to a document
Use highly detailed text information and prior knowledge to describe a similarity and a difference (312)
(308) Provide example of difference between two editorials
Identify reason for narrator's description (301)
302
Compare seemingly disparate text elements (293)
(289) Relate text information to hypothetical situation
Provide aspects of setting (287)
Infer character's action from plot outcome (284)
Basic
(284) Follow directions to completely fill out a form
(277) *Identify appropriate description of article subject*
Identify explicitly stated reason for article event (270)
265
(265) Name location of document's key feature
Identify description of story conclusion (257)
(257) Use task directions and prior knowledge to make a comparison
Describe main action of story (247)
Below Basic
(228) *Recognize usefulness of document's key feature*
(220) Explain personal reaction to performing a task
0

NOTE: Regular type denotes a constructed-response question. *Italic type* indicates a multiple-choice question.

Each grade 12 reading question was mapped onto the NAEP 0-to-500 reading scale. The position of the question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for reading achievement levels are referenced on the map. [SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.]

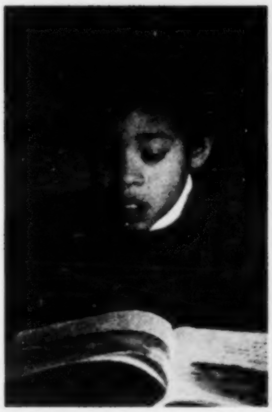
Summary

As shown by the results presented in this chapter, the reading performance of the nation's students showed improvement at all three grades.

At grade 4 in 1998, the national average scale score of 217 was higher than that in 1994. This overall increase was observed among lower-performing students at the 10th and 25th percentiles of the performance distribution. The percentages of fourth-grade students at or above each of the reading achievement levels remained relatively stable across assessment years; no statistically significant changes were observed in 1998 as compared to 1994 and 1992.

At grade 8 in 1998, the national average scale score of 264 was higher than in both 1994 and 1992. This overall increase was observed among lower- and middle-performing students. The 10th, 25th, and 50th percentiles of the performance distribution of eighth graders were higher in 1998 than in both 1994 and 1992. The 75th percentile was higher in comparison to 1992. The pattern of achievement level results is consistent with the pattern of performance by percentiles. More eighth graders attained at least the *Basic* and *Proficient* levels in 1998 than in both 1994 and 1992; however, no increase was observed in the percentage of eighth graders at the *Advanced* level of reading performance.

At grade 12 in 1998, the national average scale score of 291 was higher than in 1994. This overall increase was observed among middle- and high-performing students. At twelfth grade the 50th, 75th, and 90th percentiles were higher in 1998 than in 1994. The 90th percentile was also higher in comparison to 1992. Among lower-performing twelfth graders, the 10th percentile was lower than in 1992. The pattern of achievement level results is consistent with the pattern of performance by percentiles. Increased percentages of students attained the *Basic, Proficient* and *Advanced* levels in 1998 than in 1994. Although a greater percentage of twelfth graders reached the *Advanced* level in 1998 compared to 1992, the percentage who were at or above *Basic* in 1998 was lower than in 1992.



CHAPTER 2

Average Reading Scale Score Results for Selected Subgroups

Overview

This chapter presents average reading scale score results for various subgroups of students. An examination of the score patterns of these subgroups provides insight into how general patterns of reading performance are related to certain background characteristics. Results are reported by gender, race/ethnicity, parents' education level, region, type of location, eligibility for the free/reduced-price lunch program, and type of school. Comparisons of 1998 results to the 1994 and 1992 reading assessment results are possible for all subgroups except eligibility for the free/reduced-price lunch program because 1998 was the first year these data were collected for the NAEP reading assessment. Achievement level results for these subgroups are presented in Chapter 3.

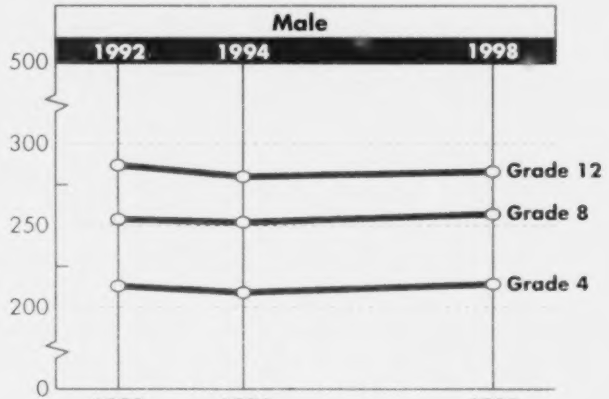
The differences reported between subgroups for the 1998 assessment and between past assessments discussed in this chapter are based on statistical tests that consider both the magnitude of the difference between the group average scores or percentages and the standard errors of those statistics. Throughout the chapter, differences are discussed only if they were determined to be statistically significant. In interpreting subgroup results, the reader is reminded that differences in reading performance may reflect a range of socioeconomic and educational factors not discussed in this report or addressed by the NAEP assessment program.

Gender

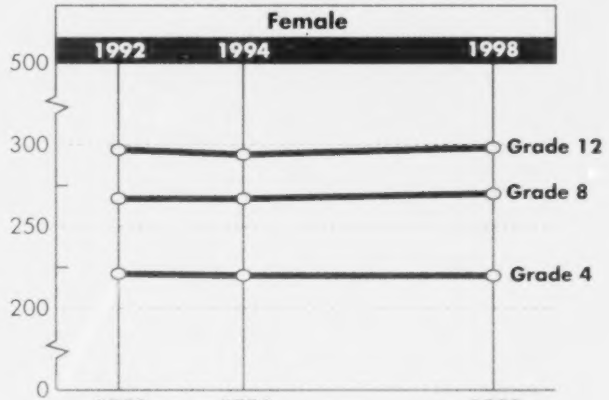
The 1992, 1994, and 1998 average reading scale scores for males and females are presented in Figure 2.1. In this figure and all the figures in this chapter, the percentage of students in each subgroup (e.g., the percentage of females in the sample) is presented below the average scale score. The results for 1998 are generally optimistic for both male and female students. At the fourth-grade level, the average score for male students in 1998 exceeded that in 1994. The average score for fourth-grade females did not differ from the previous assessments. For both male and female students in eighth grade, performance in 1998 was higher than in 1994 and in 1992. At the twelfth grade, the average score of females increased between 1994 and 1998. For twelfth grade males, however, an apparent score increase in 1998 was not significantly different than 1994 and remained lower than the 1992 average score for male students. As with past assessments, females outperformed males at all three grades in 1998.

Figure 2.1

Average reading scale scores by gender: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	287 [illegible]	280 [illegible]	283 * 48
Grade 8	254 [illegible]	252 [illegible]	257 *+ [illegible]
Grade 4	213 [illegible]	209 [illegible]	214 + [illegible]



	1992	1994	1998
Grade 12	297 [illegible]	294 [illegible]	298+ [illegible]
Grade 8	267 49	267 [illegible]	270*+ [illegible]
Grade 4	221 49	220 49	220 [illegible]

Below each average scale score, the corresponding percentage of students is presented.

* Indicates that the average scale score in 1998 is significantly different from that in 1992.
+ Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Race/Ethnicity

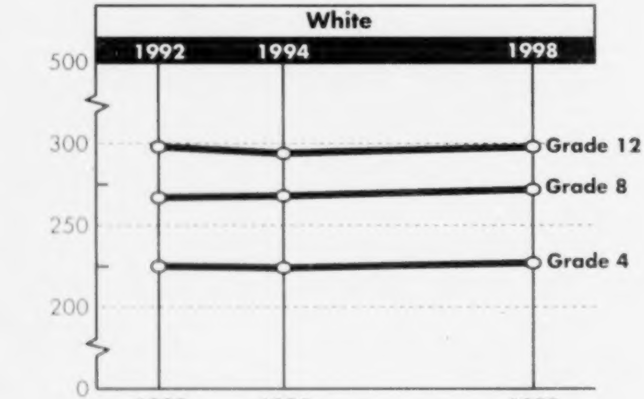
As part of the background questionnaire that was administered with the NAEP 1998 reading assessment, students were asked to indicate the racial/ethnic subgroup that best described them. In the 1992 and 1998 reading assessments, the mutually exclusive response options were: White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaskan native). A similar question was asked of students participating in the 1994 reading assessment, but the Asian/Pacific Islander option was divided into separate Asian and Pacific Islander response options. To analyze changes in performance across assessments, the separate Asian and Pacific Islander response categories in 1994 were collapsed into a single category.

The 1992, 1994, and 1998 average reading scale scores for students in racial/ethnic subgroups are presented in Figure 2.2. While the performance of grade 4 White students has remained relatively stable across assessments, White students in grades 8 and 12 showed improvement in 1998. Among eighth graders, performance in 1998 was higher than in 1994 and 1992, and twelfth-grade students showed increases since 1994. Black students in grade 4 had higher performance in 1998 than in 1994. Eighth-grade Black students showed improvement in 1998 with increases since both previous assessments. No significant differences were observed across assessment years in the average score for Black students in grade 12. For Hispanic students, apparent score increases since 1994 among fourth and eighth graders in 1998 were not statistically significant. At grade 12, however, the average score increased between 1994 and 1998. The results for Asian/Pacific Islander students and American Indian students showed no significant changes across the assessments.

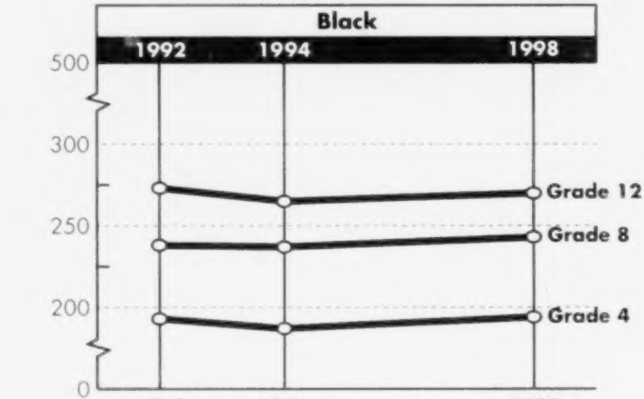
As with previous assessments in a variety of academic subjects, differences in reading performance among racial/ethnic groups were evident at all three grades in 1998. White and Asian fourth-grade students outscored their Black, Hispanic, and American Indian counterparts. American Indian students also outperformed Black students in grade 4. Among grade 8 students, White and Asian students again scored higher than their Black, Hispanic, and American Indian peers. At grade 12, White students had higher scores than Black, Hispanic, and American Indian students. Asian students outperformed their Black and Hispanic peers, and Hispanic students had higher scores than Black students.

Figure 2.2

Average reading scale scores by race/ethnicity: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	298	294	298+
Grade 8	267	268	272*+
Grade 4	225	224	227



	1992	1994	1998
Grade 12	273	265	270
Grade 8	238	237	243*+
Grade 4	193	187	194+

Below each average scale score, the corresponding percentage of students is presented.

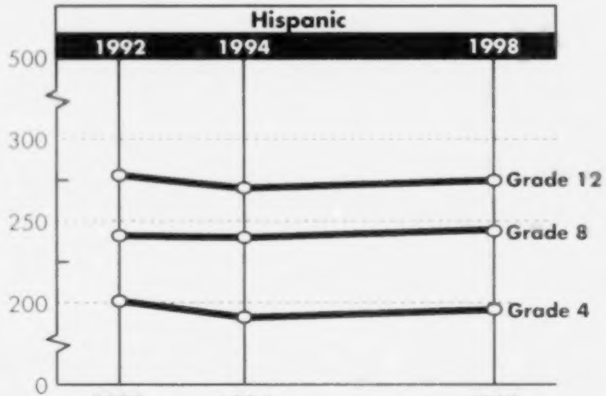
* Indicates that the average scale score in 1998 is significantly different from that in 1992.

+ Indicates that the average scale score in 1998 is significantly different from that in 1994.

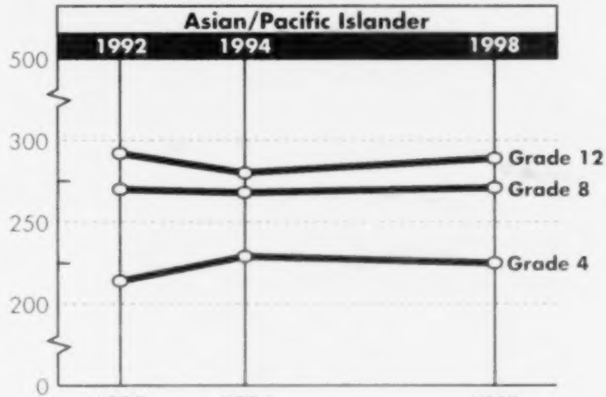
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.2 (cont'd)

Average reading scale scores by race/ethnicity: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	278	270	275*
Grade 8	241	240	244
Grade 4	201	191	196



	1992	1994	1998
Grade 12	292	280	289
Grade 8	270	268	271
Grade 4	214	229	225

Below each average scale score, the corresponding percentage of students is presented.

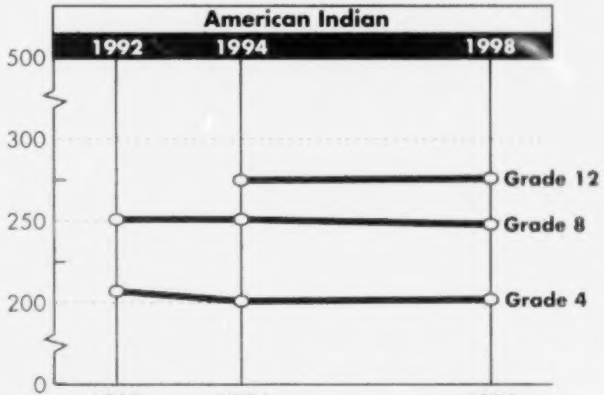
* Indicates that the average scale score in 1998 is significantly different from that in 1994.

NOTE: The separate Asian and Pacific Islander response categories in 1994 were combined to allow for comparisons across assessments.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.2 (cont'd)

Average reading scale scores by race/ethnicity: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	***	275 1	276 1
Grade 8	251 1	251 1	248 1
Grade 4	207 2	201 2	202 2

Below each average scale score, the corresponding percentage of students is presented.

*** Sample size is insufficient to permit a reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Differences Between Selected Subgroups Across the Assessment Years

Results from previous NAEP assessments in reading consistently indicate performance differences between racial/ethnic subgroups and between female and male students.[1] Interpretations and conclusions based on an examination of the differences between subgroups of students should be made cautiously. The average scale scores attained by a selected population do not reflect entirely the range of abilities within that population. In addition, differences between subgroups can not be attributed simply to students' subgroup identification. A complex array of factors combine to affect students' achievement and their performance on measures of reading comprehension. Important issues such as opportunities to learn and sociocultural environmental factors must be considered in interpreting these differences.[2]

Differences between the average scale scores of White students and their Black and Hispanic peers, and differences between the average scale scores of female and male students, are presented in Table 2.1 for the 1992, 1994, and 1998 NAEP reading assessments. The data presented in this table represent scale score differences between the two subgroups referenced above each column. For example, in the column labeled "White-Black," the difference of 33 scale points for fourth graders in 1998 indicates that the average scale score for White fourth graders was 33 points higher than that for Black fourth graders.

Although scores have increased for many of the racial/ethnic groups since the 1992 reading assessment, performance differences for White students and their Black, Hispanic, and American Indian counterparts were consistent at all three grades in 1998. In general, the largest gaps were between White and Black students, ranging from 28 points at grade 12 to 33 points at grade 4. The gap between White and Hispanic students ranged from 23 points at grade 12 to 31 points at grade 4. White students outscored American Indian students by 25 points in grade 4, and by 22 points in grade 12. As indicated in Table 2.1, the performance differences between these subgroups of students have not changed significantly across the three assessment years, except in two cases.

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[1] Mullis, I. V. S., Campbell, J. R., & Farstrup, A. E. (1993). *NAEP 1992 reading report card for the nation and the states.* Washington, DC: National Center for Education Statistics.

Campbell, J. R., Donahue, P. D., Reese, C. M., & Phillips, G. W. (1996). *NAEP 1994 reading report card for the nation and the states.* Washington, DC: National Center for Education Statistics.

[2] Stevens, F. (1993). *Opportunity to learn: Issues of equity for poor and minority students.* Washington, DC: National Center for Education Statistics.

Table 2.1

Differences in average reading scale scores by race/ethnicity and by gender: 1992, 1994, and 1998

	Race/Ethnicity						Gender		
	White – Black (Difference)			**White – Hispanic** (Difference)			**Female – Male** (Difference)		
	1992	**1994**	**1998**	**1992**	**1994**	**1998**	**1992**	**1994**	**1998**
Grade 4	32	37	33	23	33	31*	8	10	6
Grade 8	30	31	28	26	27	27	13	15	13
Grade 12	25	29	28	20	24	23	10	14	16*

* Indicates that the difference in average scale scores in 1998 is significantly different from that in 1992.

NOTE: Differences are calculated prior to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

The performance differences observed in 1998 between White and Black students in the fourth, eighth, and twelfth grades were not significantly changed from those observed in 1994 or 1992. Nor were the differences between White and Hispanic students in grades 8 and 12 significantly changed. Among fourth graders, however, the average scale score difference between White and Hispanic students in 1998 was greater than that observed in 1992.

The results of the NAEP reading assessment in 1998 confirmed the findings of previous research regarding differences in reading performance by gender. For all three grade levels, female students outscored their male peers. The average scale score difference in 1998 was six points at grade 4, 13 points at grade 8, and 16 points at grade 12. The only significant change between the average scale scores of male and female students across the three assessment years occurred at grade 12, where results indicated a greater difference in 1998 compared to that in 1992.

Parents' Highest Level of Education

Students were asked to indicate the highest level of education completed by each parent. Four levels of parental education were identified: did not finish high school, graduated from high school, some education after high school, and graduated from college. A choice of "I don't know" was also available. For this analysis, the highest education level reported for either parent was used. Due to significant changes in the wording of the parental education question for fourth graders in the 1998 assessment, the 1998 results are not comparable to those for other assessments; therefore, grade 4 results are not reported.

Previous NAEP assessments in all subject areas have found that students who reported higher levels of parental education demonstrated higher performance in the assessments. However, some research has questioned the accuracy of student-reported data; therefore, caution should be used in interpreting the findings.[3]

The results for all levels of student-reported parental education are given in Figure 2.3. It should be noted that, in 1998, nine percent of eighth graders and two percent of twelfth graders reported not knowing the education level of their parents.

Few significant changes across assessment years were observed among parental education subgroups. For grade 8 students who reported at least one parent graduated from college, the average score in 1998 was significantly higher than in 1994 and 1992. For grade 12 students who reported their parents did not finish high school, performance in 1998 was below that in 1992, but did not differ significantly from 1994.

As with previous assessments, a relationship between level of parental education and reading scores was again evident. At both grades 8 and 12 in 1998, students who reported higher levels of parental education had higher average scale scores.

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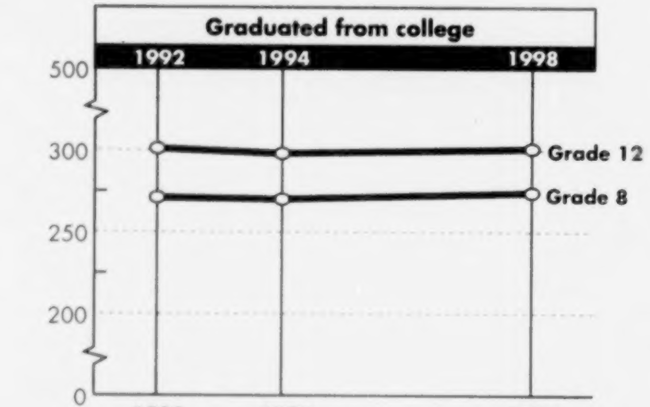
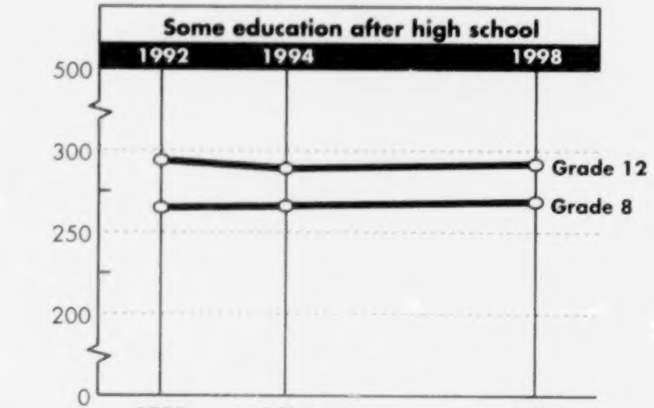
[3] Looker, E.D. (1989). Accuracy of proxy reports of parental status characteristics. *Sociology of Education, 62*(4), 257–279.

Figure 2.3

Average reading scale scores by parents' highest education level: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	301 41	298 44	301 45
Grade 8	271 41	270 43	274*+ 44



	1992	1994	1998
Grade 12	294 27	289 25	292 25
Grade 8	265 19	266 20	269 18

Below each average scale score, the corresponding percentage of students is presented.

NOTE: Due to significant changes in the wording of the parental education question in 1998 for grade 4 students, the results for these students are not reported.

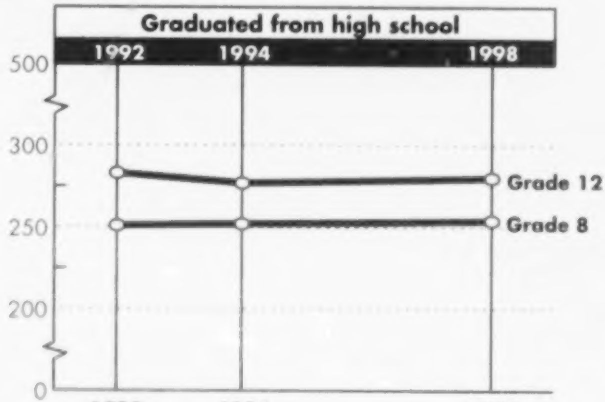
* Indicates that the average scale score in 1998 is significantly different from that in 1992.
+ Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.3 (cont'd)

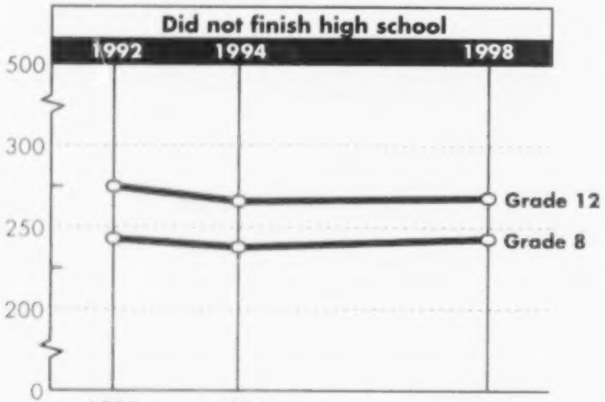
Average reading scale scores by parents' highest education level: 1992, 1994, and 1998

Graduated from high school



	1992	1994	1998
Grade 12	283 22	277 21	280 19
Grade 8	251 24	252 21	254 22

Did not finish high school



	1992	1994	1998
Grade 12	275 8	266 7	268* 7
Grade 8	243 8	238 7	243 7

Below each average scale score, the corresponding percentage of students is presented.

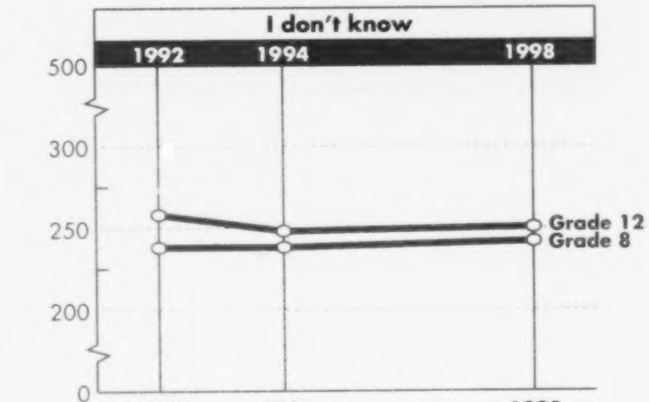
NOTE: Due to significant changes in the wording of the parental education question in 1998 for grade 4 students, the results for these students are not reported.

* Indicates that the average scale score in 1998 is significantly different from that in 1992.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.3 (cont'd)

Average reading scale scores by parents' highest education level: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	258 2	248 2	250 2
Grade 8	238 8	238 9	242 9

Below each average scale score, the corresponding percentage of students is presented.

NOTE: Due to significant changes in the wording of the parental education question in 1998 for grade 4 students, the results for these students are not reported.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Region of the Country

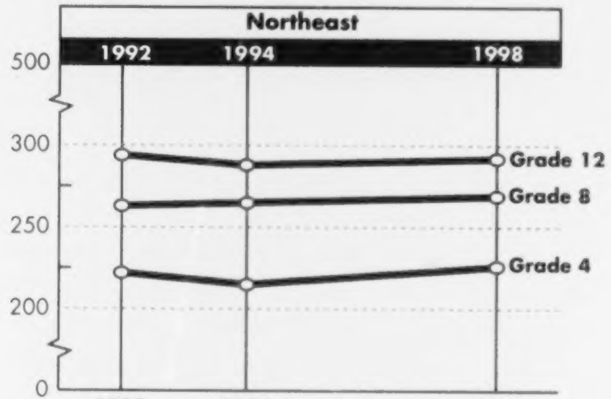
In addition to national results, NAEP assessments traditionally provide results for four regions of the country: Northeast, Southeast, Central, and West. The composition of the regions is described in Appendix A. Figure 2.4 presents regional results for all three grades.

Among students in the Northeast, the average score increased since 1994 for fourth graders. Grade 8 students had a higher average score in 1998 than in 1992. There were no significant changes for grade 12 students. There were no significant changes in performance across the assessments for Southeast students in grades 4 and 12. In grade 8, however, performance in 1998 was above that in both 1994 and 1992. In the Central region, there were no significant changes in performance for students in grades 4 or 8. Among grade 12 students, performance in 1998 was above that in 1994. For all three grades in the West, students' performance in 1998 did not differ significantly from that in previous assessments.

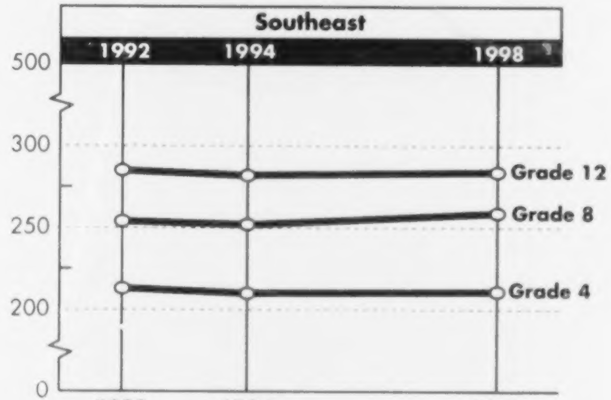
Comparisons of scale scores between the regions show differing performance across the country. At grades 4 and 8, students in the Northeast and Central regions outperformed their peers in the Southeast and West. At grade 12, students in the Southeast had lower scores than students in the other three regions. In addition, Central region twelfth-grade students outperformed their counterparts in the West.

Figure 2.4

Average reading scale scores by region:
1992, 1994, and 1998



	1992	1994	1998
Grade 12	294 24	288 20	292 22
Grade 8	263 22	265 20	269* 22
Grade 4	222 21	215 23	226+ 22



	1992	1994	1998
Grade 12	285 23	282 23	284 23
Grade 8	254 25	252 26	259*+ 24
Grade 4	213 23	210 23	211 26

Below each average scale score, the corresponding percentage of students is presented.

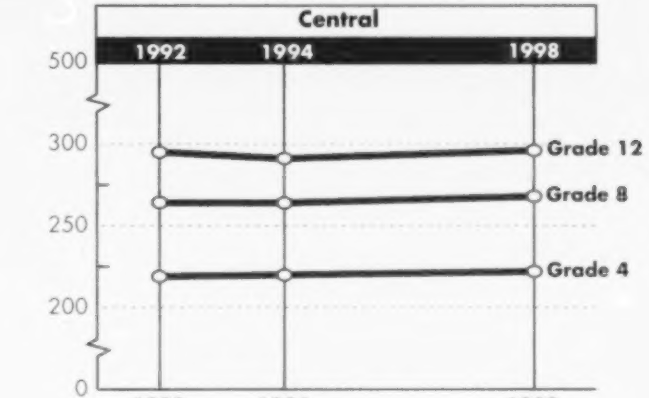
* Indicates that the average scale score in 1998 is significantly different from that in 1992.

+ Indicates that the average scale score in 1998 is significantly different from that in 1994.

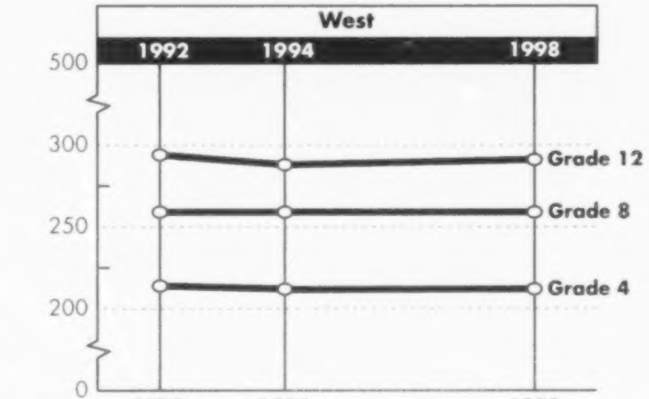
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.4 (cont'd)

Average reading scale scores by region: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	295 26	291 27	296* 26
Grade 8	264 25	264 24	268 25
Grade 4	219 27	220 25	222 24



	1992	1994	1998
Grade 12	294 27	288 29	291 29
Grade 8	259 26	259 30	259 29
Grade 4	214 28	212 29	212 28

Below each average scale score, the corresponding percentage of students is presented.

* Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Type of Location

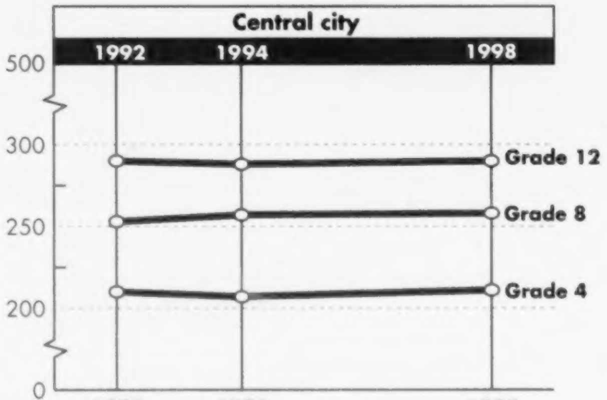
Each participating school in the 1998 reading assessment was classified according to its type of location. The three categories of location — central city, urban fringe/large town, and rural/small town — are based on Census Bureau definitions of metropolitan statistical areas, population size, and density. These classifications are based solely on geographic characteristics. The type of location classifications are described in Appendix A. Figure 2.5 presents scale score results for all three grades by type of location.

In the central city location, the grade 8 average score in 1998 was above that in 1992, but did not differ significantly from 1994. Among students in grades 4 and 12, performance in 1998 did not differ significantly from that in previous assessments. Students in grades 8 and 12 in urban fringe/large town locations showed increased performance since 1994; students in grade 4 had relatively stable performance across the assessments. For grade 12 students in rural/small town locations, the average score in 1998 was above that in 1994. For fourth- and eighth-grade students in rural/small town locations, no significant change in performance was observed across assessment years.

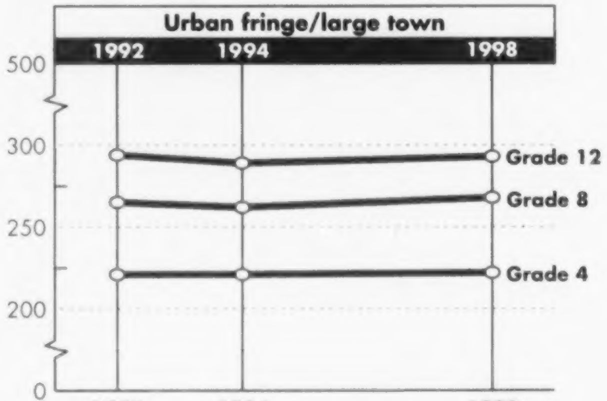
Comparisons of performance in 1998 showed that fourth- and eighth-grade students in central cities had lower performance than their peers in the other locations. Also urban fringe/large town students had higher scores than their peers in rural/small towns at grade 8. In contrast, there were no significant differences between any locations at grade 12.

Figure 2.5

Average reading scale scores by type of location: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	290 31	288 32	290 31
Grade 8	253 32	257 34	258* 34
Grade 4	210 32	207 35	211 35



	1992	1994	1998
Grade 12	294 43	289 42	293+ 39
Grade 8	265 43	262 40	268+ 40
Grade 4	221 41	221 43	222 36

Below each average scale score, the corresponding percentage of students is presented.

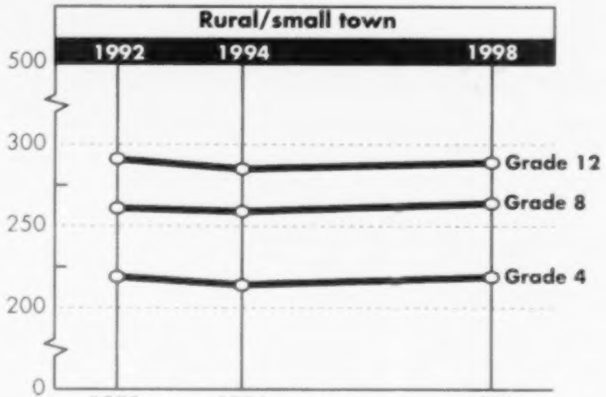
* Indicates that the average scale score in 1998 is significantly different from that in 1992.

+ Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.5 (cont'd)

Average reading scale scores by type of location: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	291 25	285 26	289* [illegible]
Grade 8	261 24	259 26	264 27
Grade 4	219 26	214 21	219 24

Below each average scale score, the corresponding percentage of students is presented.

* Indicates that the average scale score in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Eligibility for the Free/Reduced-Price Lunch Program

The free/reduced-price lunch component of the National School Lunch Program (NSLP), offered through the U.S. Department of Agriculture (USDA), is designed to ensure that children near or below the poverty line receive nourishing meals.[4] The program is available to public schools, nonprofit private schools, and residential child care institutions. Eligibility for free or reduced-price meals is determined through the USDA's Income Eligibility Guidelines, and is included in this report as an indicator of poverty.

NAEP first collected information on student eligibility for the federally funded NSLP in 1996. Although results cannot be presented for previous NAEP reading assessments, the NAEP program will continue to monitor the performance of these students in future assessments.

The 1998 results for the percentage of students eligible for the free/reduced-price lunch program are given in Table 2.2. Thirty-five percent of students at grade 4, 27 percent of students at grade 8, and 14 percent of students at grade 12 were eligible for the program. Consistent across all three grades, students who were eligible for the free/reduced-price lunch program demonstrated lower reading performance than students who were not eligible for the program.

Table 2.2

Average reading scale scores by free/reduced-price lunch program eligibility: 1998

	Grade 4	Grade 8	Grade 12
Eligible	198 35	246 27	271 14
Not eligible	227 54	270 56	293 67
Information not available	227 12	272 17	296 19

Below each average scale score, the corresponding percentage of students is presented.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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[4] U.S. General Services Administration. (1995). *Catalog of federal domestic assistance.* Washington, DC: Executive Office of the President, Office of Management and Budget.

Type of School

Previous NAEP reading assessments and other survey research on educational achievement have found significant differences in the performance of students attending public and nonpublic schools.[5] However, the reader is cautioned against using NAEP results to make simplistic inferences about the relative effectiveness of public and nonpublic schools. Average performance differences between the two types of schools may be related in part to socioeconomic and sociological factors. For example, some research points to instructional and policy differences between the two types of schools to explain the higher performance of private school students, while other studies have suggested that student selection and parental involvement are more significant contributors to the performance differences.[6]

Average reading scale scores by type of school are presented in Figure 2.6. Schools were classified as either public or nonpublic; nonpublic schools were then further subclassified as Catholic or other nonpublic. Between 1994 and 1998, scores increased for eighth- and twelfth-grade students attending public schools. In addition, grade 8 students showed increased performance since 1992. There were no significant changes for grade 4 public school students.

Among students attending nonpublic schools, no significant changes were observed for any grades. For grade 8 students attending nonpublic Catholic schools, an increase was observed between 1992 and 1998. No significant changes in performance were observed for students attending other nonpublic schools.

For all three grades in 1998, students in nonpublic schools outperformed their peers in public schools. Examining this difference more closely showed that both types of nonpublic schools (Catholic and other nonpublic) had higher scores than public schools at grades 4 and 8. At grade 12, Catholic schools had higher scores than public schools, but no significant difference was found between other nonpublic and public schools. For all three grades, there were no significant differences in reading performance between students attending Catholic and other nonpublic schools.

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[5] Campbell, J.R., Donahue, P.L., Reese, C.M., & Phillips, G.W. (1996). *NAEP 1994 reading report card for the nation and the states.* Washington, DC: National Center for Education Statistics.

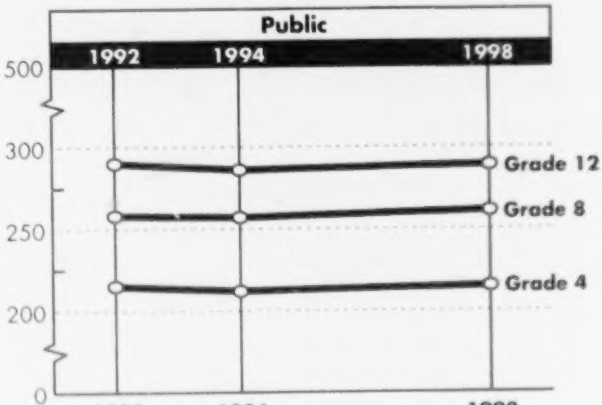
Campbell, J.R., Voelkl, K.E., & Donahue, P.L. (1997). *NAEP 1996 trends in academic progress.* Washington, DC: National Center for Education Statistics.

[6] Coleman, J., Hoffer, T., & Kilgore, S. (1982). Cognitive outcomes in public and private schools. *Sociology of Education, 55,* 65–76.

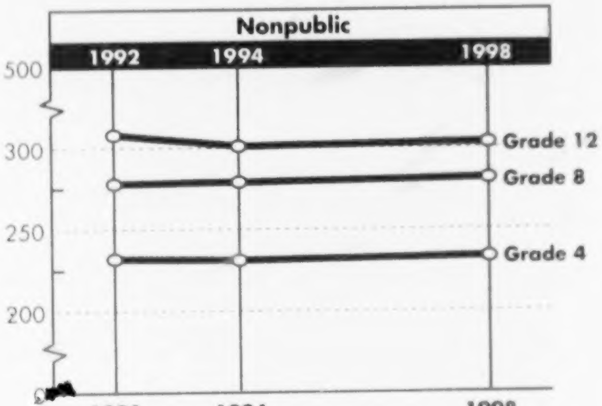
Alexander, K.L. & Pallas, A.M. (1983). Private schools and public policy: New evidence on cognitive achievement in public and private schools. *Sociology of Education, 56,* 170–182.

Figure 2.6

Average reading scale scores by type of school:
1992, 1994, and 1998



	1992	1994	1998
Grade 12	290 [illegible]	286 [illegible]	289 * [illegible]
Grade 8	258 [illegible]	257 [illegible]	261 ** [illegible]
Grade 4	215 [illegible]	212 [illegible]	215 [illegible]



	1992	1994	1998
Grade 12	308 [illegible]	301 [illegible]	303 [illegible]
Grade 8	278 [illegible]	279 [illegible]	281 [illegible]
Grade 4	232 [illegible]	231 [illegible]	233 [illegible]

Below each average scale score, the corresponding percentage of students is presented.

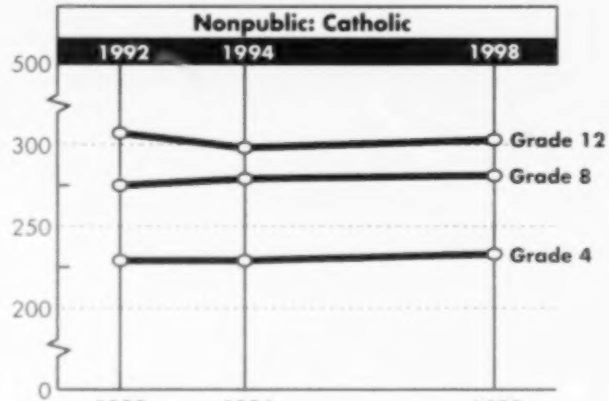
* Indicates that the average scale score in 1998 is significantly different from that in 1992.

** Indicates that the average scale score in 1998 is significantly different from that in 1994.

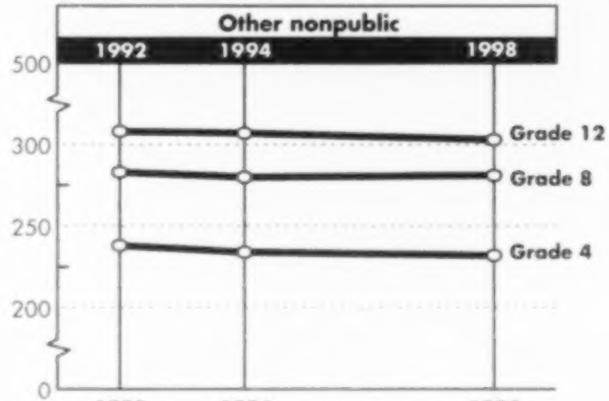
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 2.6 (cont'd)

Average reading scale scores by type of school: 1992, 1994, and 1998



	1992	1994	1998
Grade 12	307 [illegible]	298 [illegible]	303 [illegible]
Grade 8	275 [illegible]	279 [illegible]	281* [illegible]
Grade 4	229 [illegible]	229 [illegible]	233 [illegible]



	1992	1994	1998
Grade 12	308 4	307 4	303 [illegible]
Grade 8	283 4	280 4	281 [illegible]
Grade 4	238 4	234 4	232 [illegible]

Below each average scale score, the corresponding percentage of students is presented.

* Indicates that the average scale score in 1998 is significantly different from that in 1992.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Summary

Some of the 1998 scale score results reported by subgroups in this chapter reveal patterns of performance at all three grades that are consistent with past NAEP reading assessments. At all three grades in 1998, female students outperformed male students; students who reported higher levels of parental education had higher average scores than those reporting less parental education; and students attending nonpublic schools had higher average scores than their counterparts attending public schools.

In 1998, the NAEP reading assessment collected information on this federally funded program, an indicator of poverty, for the first time. At all three grades, students who were eligible for the free/reduced- price lunch program had lower average scores than students who were not eligible.

At the fourth grade in 1998, male students had a higher average score than in 1994. Among racial/ethnic groups, the only significant increase observed was for Black fourth graders whose average score in 1998 was higher than in 1994. Fourth-grade students in the Northeast region of the country had a higher score in 1998 than in 1994.

At the eighth grade in 1998, both male and female students had higher average scores than in 1994 and 1992. Among racial/ethnic groups, both White and Black eighth graders had a higher average score in 1998 than in 1994 and 1992. Eighth graders who reported the highest level of parental education, graduated from college, had a higher score in comparison to both 1994 and 1992. In the Southeast region of the country, eighth graders' average score was higher than in both 1994 and 1992; in the Northeast region, the average score was higher than in 1992. Eighth graders attending schools in urban fringe/large town locations had a higher average score than in 1994, and eighth graders attending central city schools had a higher average score than in 1992. Eighth-grade students attending public schools had a higher average score in comparison to both 1994 and 1992, and eighth graders in nonpublic Catholic schools had a higher score in comparison to 1992.

At the twelfth grade in 1998, the average score of females was higher than in 1994, but for male students the average score in 1998 was lower than in 1992. Among racial/ethnic groups, both White and Hispanic twelfth graders had higher average scores in 1998 than in 1994. Twelfth graders who reported the lowest level of parental education, did not finish high school, had a lower score than in 1992. In the Central region of the country, twelfth graders' average score in 1998 was higher than in 1994. Twelfth graders attending schools in urban fringe/large town and in rural/small town locations had higher average scores in 1998 than in 1994. An increase was also observed for twelfth graders attending public schools; the average score of these public school students in 1998 was higher in comparison to 1994.

CHAPTER 3

Reading Achievement Level Results for Selected Subgroups

Overview

The performance of our nation's students on the NAEP reading scale can also be viewed in relation to expectations of what students should know and should be able to do. The percentages of students who attained the three achievement levels established by the National Assessment Governing Board (NAGB) provide a measure of performance that meets these expectations.

Three reading achievement levels — *Basic*, *Proficient*, and *Advanced* — are used to report the NAEP results. The Board established these reading levels in 1992 for the content framework that provided the basis for the 1992, 1994, and 1998 reading assessments. The *Basic* level denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade. The *Proficient* level represents solid academic performance. Students reaching this level demonstrate competency over challenging subject matter. The *Advanced* level signifies superior performance at a given grade. For each grade, the levels are cumulative; that is, abilities achieved at the *Proficient* level presume mastery of abilities associated with the *Basic* level, and attainment of the *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels. Specific definitions of these levels of reading achievement as they apply at each of the three grades are presented in Figure 1.2 in Chapter 1. No description is provided for students performing below the *Basic* level.

The NAEP legislation requires that achievement levels be "used on a developmental basis until the Commissioner of Education Statistics determines . . .that such levels are reasonable, valid, and informative to the public." A discussion of the developmental status of achievement levels may be found in the introduction to this report (pages 10-12).

Gender

The percentages of male and female students attaining the *Basic*, *Proficient*, and *Advanced* levels are given in Table 3.1 and Figure 3.1. Among grade 4 students, no significant changes were found for either males or females in the percentage of students attaining any of the achievement levels. The percentage of eighth-grade male and female students at or above the *Proficient* level in 1998 was higher than that in 1992, and males showed an increase since 1994. At the lower achievement levels, both male and female eighth graders showed improvements in reading performance. The percentage of students at or above the *Basic* level in 1998 was higher than that in 1994 and 1992. Likewise, the percentage of males and females below the *Basic* level in 1998 was lower than that in 1994 and 1992. The performance of grade 12 males in 1998 was mixed. For instance, the percentage of males at the *Advanced* level in 1998 increased since 1994. However, the percentage at or above the *Basic* level in 1998 was below that in 1992, and the percentage of males below the *Basic* level was greater in 1998 than in 1992. In 1998, while 70 percent of males were at or above the *Basic* level, 38 percent were within the *Basic* achievement level range (see Figure 3.1). The results for grade 12 females were positive. The percentage of female students at or above the *Proficient* level in 1998 was higher than in 1994, and more females reached the *Advanced* level in 1998 than in 1992.

In 1998, gender differences were seen at all three grades in the percentages of students attaining the *Basic*, *Proficient*, and *Advanced* levels. At all grades and for all levels, the reading performance of female students exceeded that of their male peers.

Table 3.1

Percentage of students at or above reading achievement levels by gender: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
	Grade 4				Grade 4				Grade 4			
Male	42	58	25	5	45	55	26	6	41	59	28	6
Female	33	67	32	8	34	66	34	9	35	65	33	8
	Grade 8				Grade 8				Grade 8			
Male	36	64	23	2	38	62	23	2	32*+	68*+	27*+	2
Female	24	76	35	4	23	77	36	4	19*+	81*+	40*	4
	Grade 12				Grade 12				Grade 12			
Male	25	75	34	2	31	69	29	2	30*	70*	32	4+
Female	16	84	46	5	20	80	43	6	17	83	48+	8*

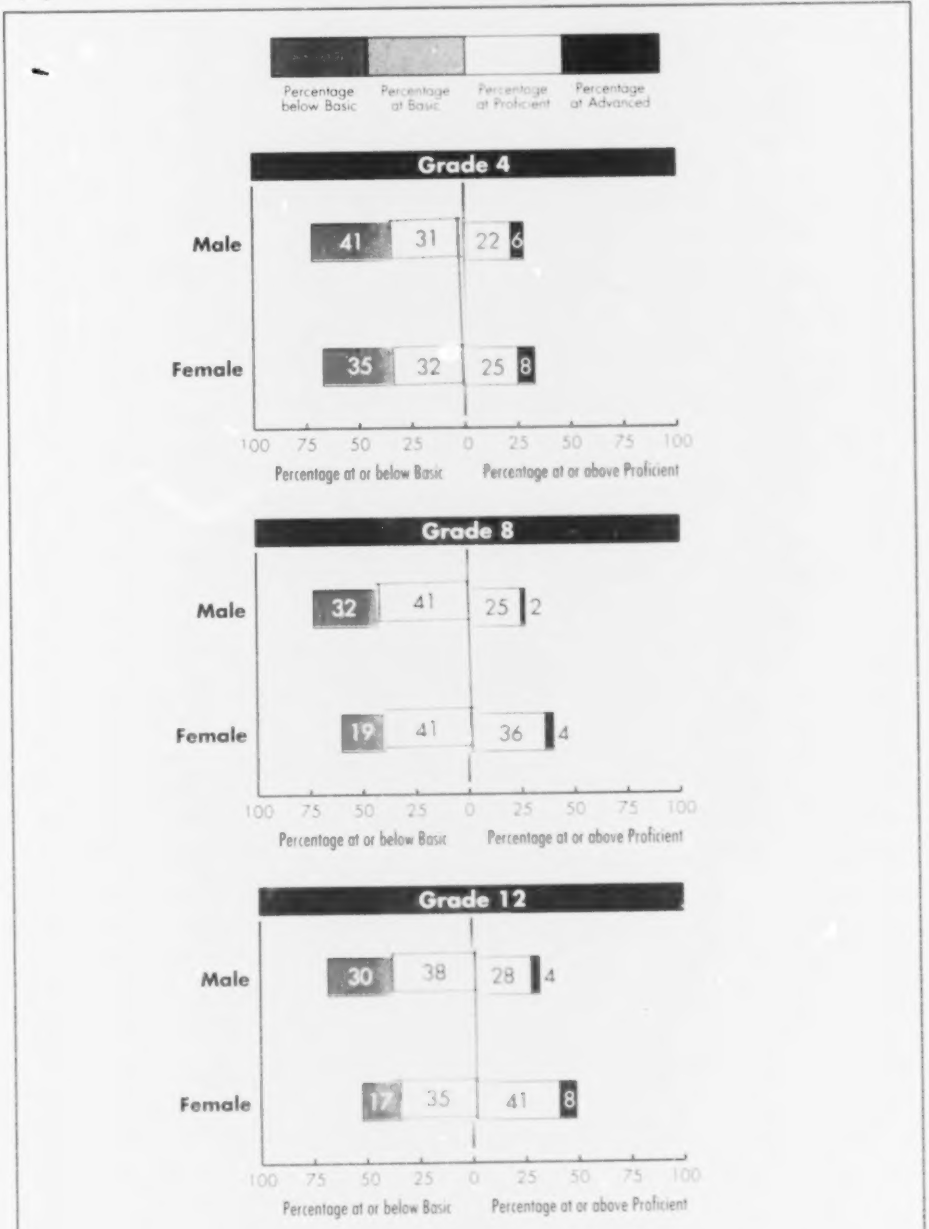
* Indicates that the percentage in 1998 is significantly different from that in 1992.

+ Indicates that the percentage in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.1

Percentage of students within each achievement level range by gender: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Race/Ethnicity

Achievement level results for fourth-, eighth-, and twelfth-grade students in five racial/ethnic groups are presented in Table 3.2 and Figure 3.2. While the performance of White students at grades 8 and 12 showed improvement in 1998, few changes across the assessment years were found for other racial/ethnic groups. In 1998, the percentage of White students in grade 12 at the *Advanced* level was higher than in 1992. The percentage of White students in grades 8 and 12 at or above the *Proficient* level in 1998 increased since 1994. Improvements at the lower achievement levels were also found for grade 8 White students. For these students, the percentage at or above the *Basic* level in 1998 was higher than in 1994 and 1992. Likewise, a lower percentage of white eighth graders was below the *Basic* level in 1998 than in the previous assessments. For Black students in grade 8, the percentage at or above the *Basic* level in 1998 was higher than in 1994, and fewer students were below the *Basic* level in 1998 than in 1994. Comparing Table 3.2 with Figure 3.2 shows that while the percentage of eighth-grade Black students at or above the *Basic* level in 1998 was 53 percent, about 40 percent of students were within the *Basic* achievement level interval. No significant performance trends were found for the other racial/ethnic groups.

In 1998, differences among racial/ethnic groups were apparent at grades 4, 8, and 12. At the *Advanced* level, the percentages of White students were greater than those of Black and Hispanic students at all grades, and greater than American Indian students at grade 4. At the *Proficient* level, White students outperformed their Black, Hispanic, and American Indian peers at all grades. In addition, a higher percentage of White than Asian/Pacific Islander students reached the *Proficient* level at grade 12. At all three grades, the percentages of White students at or above the *Basic* level was greater than that for their Black, Hispanic, and American Indian counterparts. At all three grades in 1998, there were no achievement level differences between Black and Hispanic students with one exception — the percentage of Hispanic twelfth graders at or above the *Proficient* level was higher than that for Black twelfth graders.

Table 3.2

Percentage of students at or above reading achievement levels by race/ethnicity: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
White	29	71	35	8	29	71	37	9	27	73	39	10
Black	67	33	8	1	69	31	9	1	64	36	10	1
Hispanic	56	44	16	3	64	36	13	2	60	40	13	2
Asian/Pacific Islander	41	59	25	4	25	75	44	13	31	69	37	12
American Indian	47	53	18	3	52	48	18	3	53	47	14	2
Grade 8												
White	22	78	36	4	22	78	36	4	18*+	82*+	41+	4
Black	55	45	9	0	56	44	9	0	47+	53+	12	0
Hispanic	51	49	14	1	51	49	14	1	46	54	15	1
Asian/Pacific Islander	22	78	39	7	25	75	37	5	18	82	39	4
American Indian	39	61	20	1	37	63	20	1	39	61	18	1
Grade 12												
White	14	86	47	5	19	81	43	5	17	83	47+	7*
Black	39	61	18	1	48	52	13	1	43	57	18	1
Hispanic	34	66	24	2	42	58	20	1	36	64	26	2
Asian/Pacific Islander	22	78	41	5	32	68	31	3	25	75	38	6
American Indian	***	***	***	***	39	61	20	2	35	65	27	3

* Indicates that the percentage in 1998 is significantly different from that in 1992.

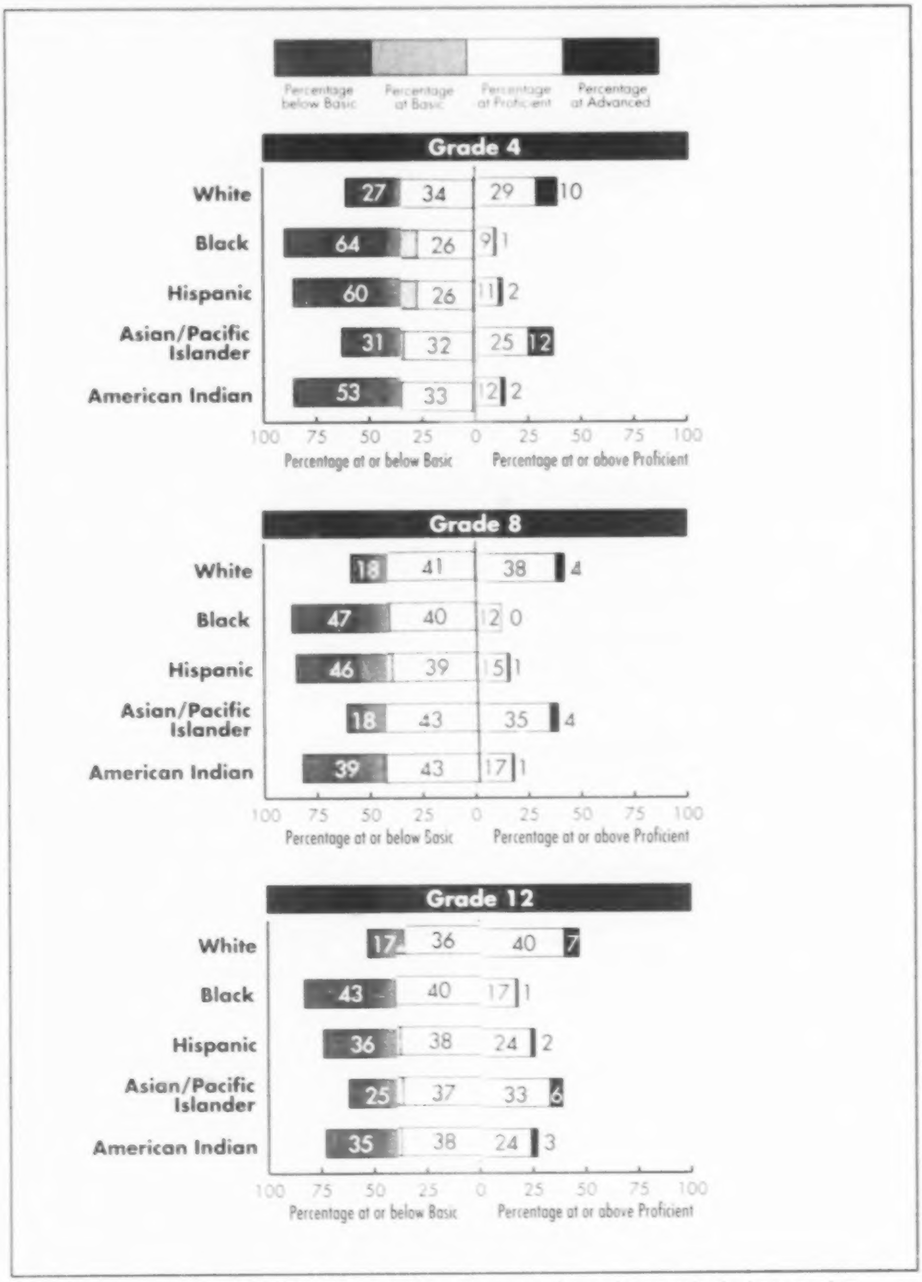
+ Indicates that the percentage in 1998 is significantly different from that in 1994.

*** Sample size insufficient to permit a reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.2

Percentage of students within each achievement level range by race/ethnicity: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Parents' Highest Level of Education

Table 3.3 and Figure 3.3 present achievement level results based on students' reports of their parents' highest level of education. Due to significant changes in the wording of the parental education question for fourth graders in the 1998 reading assessment, the 1998 results are not comparable to those in other assessments; therefore, grade 4 results are not reported.

As shown in Table 3.3, parental education and student achievement are positively associated. That is, eighth and twelfth graders who reported their parents as having higher levels of education tended to reach higher levels of reading achievement. This association was also found for the scale score results discussed in Chapter 2. For example, eighth- and twelfth-grade students who reported that at least one parent graduated from college were more likely to reach the *Advanced* level than students who reported lower levels of parental education.

Gains in the percentage of students at or above the *Proficient* level were seen between 1994 and 1998 for eighth graders who reported that at least one parent had graduated from college. The percentage of grade 8 students at or above the *Basic* level also increased between 1992 and 1998 and between 1994 and 1998 for those who reported their parent(s) graduated from college. Likewise, the percentage of these students who fell below the *Basic* level was lower in 1998 than in the previous assessments. In 1998, about 9 percent of grade 12 students who reported that at least one parent graduated from college reached the *Advanced* level; this percentage represented an increase since 1992.

Table 3.3

Percentage of students at or above reading achievement levels by parents' highest education level: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
	Grade 8				Grade 8				Grade 8			
Graduated from college	20	80	40	5	21	79	40	5	16*✦	84*✦	45✦	5
Some education after high school	24	76	32	3	23	77	33	3	19	81	36	2
Graduated from high school	39	61	19	1	38	62	20	1	34	66	22	1
Did not finish high school	49	51	13	1	54	46	10	0	48	52	11	0
I don't know	55	45	12	0	52	48	12	0	50	50	12	0
	Grade 12				Grade 12				Grade 12			
Graduated from college	13	87	52	6	16	84	48	7	15	85	52	9*
Some education after high school	17	83	41	3	22	78	36	3	20	80	39	4
Graduated from high school	28	72	28	2	34	66	24	2	32	68	28	2
Did not finish high school	37	63	21	0	47	53	15	1	43	57	19	1
I don't know	56	44	10	0	68	32	6	0	61	39	9	0

NOTE: Due to significant changes in the wording of the parental education question in 1998 for grade 4 students, the results for these students are not reported.

* Indicates that the percentage in 1998 is significantly different from that in 1992.

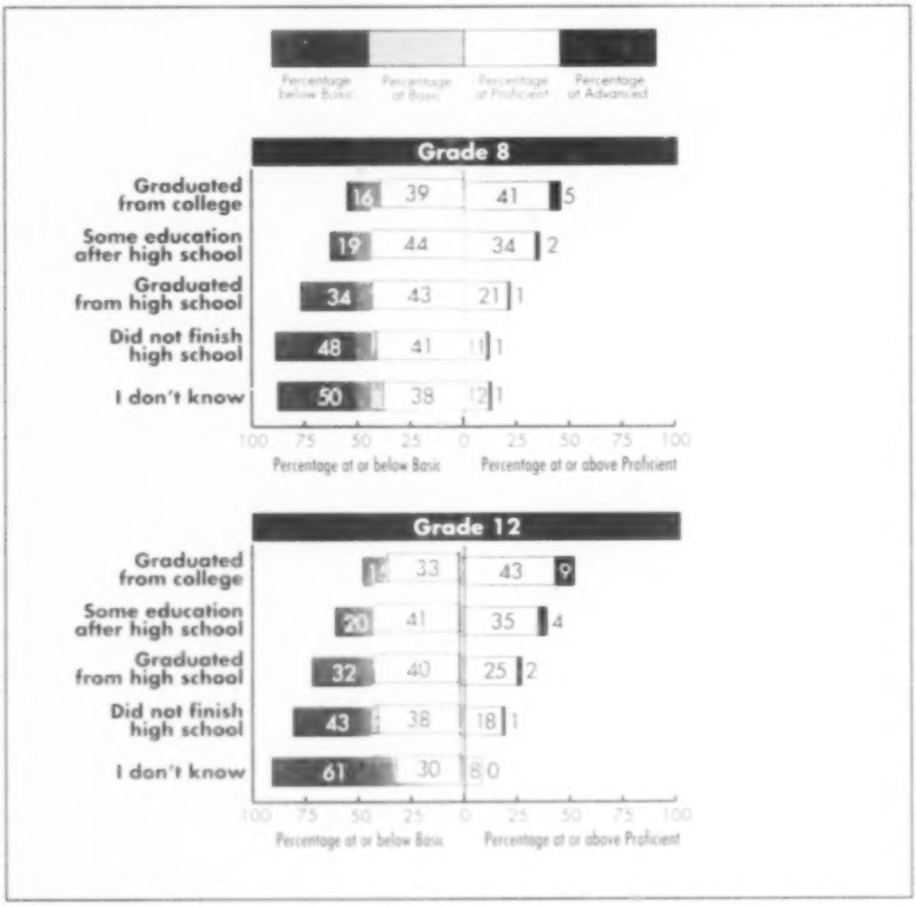
✦ Indicates that the percentage in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.3

THE NATION'S REPORT CARD naep

Percentage of students within each achievement level range by parents' highest education level: 1998



NOTE: Due to significant changes in the wording of the parental education question in 1998 for grade 4 students, the results for these students are not reported.

NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Region of the Country

In addition to national results, NAEP achievement level results are provided for four regions of the country: Northeast, Southeast, Central, and West. The composition of the regions is described in Appendix A. The percentages of students performing at or above the three achievement levels are shown in Table 3.4. For each region, the percentages of students within each achievement level range are displayed in Figure 3.4.

In general, the percentages at each achievement level across assessments were relatively stable for each region. One change across assessments was found for grade 4 students in the Northeast; the percentage of students at or above the *Basic* level was higher in 1998 than in 1994. Correspondingly, the percentage of Northeast students below the *Basic* level decreased during this same time period.

Several differences between regions were observed in the 1998 achievement level results. At the *Advanced* level, differences were observed between regions at grades 4 and 12. In 1998, a higher percentage of grade 4 students in the Northeast and Central regions reached the *Advanced* level than did their peers in the Southeast. The Northeast also outperformed the West at grade 4. At grade 12, the percentage of students at the *Advanced* level was higher in the Central and West regions than in the Southeast.

For both grades 4 and 8, higher percentages of students in the Northeast and Central regions were at or above the *Proficient* level than students in the Southeast or West. At grade 12, the Northeast, the Central, and the West regions had a higher percentage at or above the *Proficient* level than did the Southeast. The Central region also had a higher percentage at or above the *Proficient* level than the West region.

For all three grades, the Northeast region had a greater percentage of students at or above *Basic* than the Southeast, and a greater percentage at or above *Basic* than the West for grades 4 and 8. The percentages of students at or above the *Basic* level at all three grades were higher for the Central region than for the Southeast or West. At grade 12, more students in the West region were at or above the *Basic* level than in the Southeast.

Table 3.4

THE NATION'S REPORT CARD naep

Percentage of students at or above reading achievement levels by region: 1992, 1994, and 1998

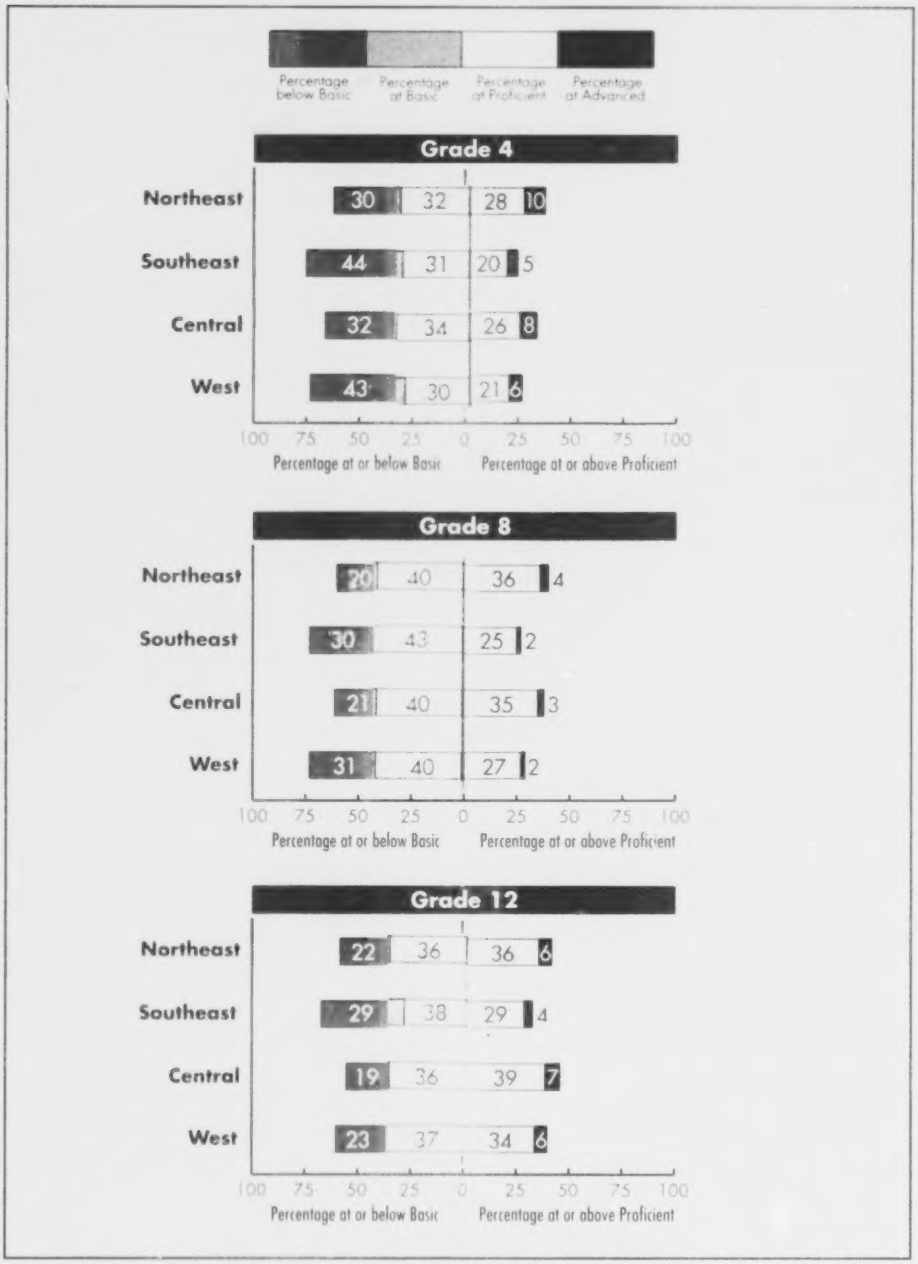
	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Northeast	34	66	34	9	39	61	31	8	30+	70+	38	10
Southeast	42	58	24	5	45	55	25	7	44	56	25	5
Central	34	66	30	6	34	66	34	8	32	68	35	8
West	41	59	27	6	41	59	29	7	43	57	27	6
Grade 8												
Northeast	28	72	33	4	26	74	35	4	20	80	40	4
Southeast	36	64	23	2	38	62	23	2	30	70	27	2
Central	26	74	32	4	25	75	33	3	21	79	39	3
West	31	69	29	3	31	69	29	3	31	69	29	2
Grade 12												
Northeast	19	81	44	5	24	76	37	5	22	78	42	6
Southeast	27	73	31	2	30	70	30	3	29	71	33	4
Central	16	84	44	4	22	78	40	5	19	81	46	7
West	19	81	42	4	26	74	38	4	23	77	40	6

+ Indicates that the percentage in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.4

Percentage of students within each achievement level range by region: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Type of Location

Table 3.5 and Figure 3.5 present achievement level results for all three grades by type of location: central city, urban fringe/large town, and rural/small town. The type of location classifications are described on page 151 in Appendix A. At grade 8, improvements were observed since 1994 for students in urban fringe/large town areas; higher percentages of students reached at least the *Basic* and *Proficient* levels in 1998 than in 1994. Also, 21 percent of eighth graders were below the *Basic* level in 1998, compared with 27 percent in 1994. At grade 12, the percentage of students at the *Advanced* level increased between 1992 and 1998 for students in urban fringe/large town locations.

Differences in the percentages of students at the achievement levels were observed between locations at the fourth- and eighth-grade levels, but no significant differences were found for grade 12 students. A greater percentage of grade 4 students reached the *Advanced* level in urban fringe/large town areas than in either central city or rural/small town locations. The same result was found at grades 4 and 8 for the percentages of students at or above the *Proficient* level. At the lower achievement level, higher percentages of students in urban fringe/large town and rural/small town areas were at or above the *Basic* level than in central city locations; these differences were found for both grades 4 and 8.

Table 3.5

THE NATION'S REPORT CARD naep

Percentage of students at or above reading achievement levels by type of location: 1992, 1994, and 1998

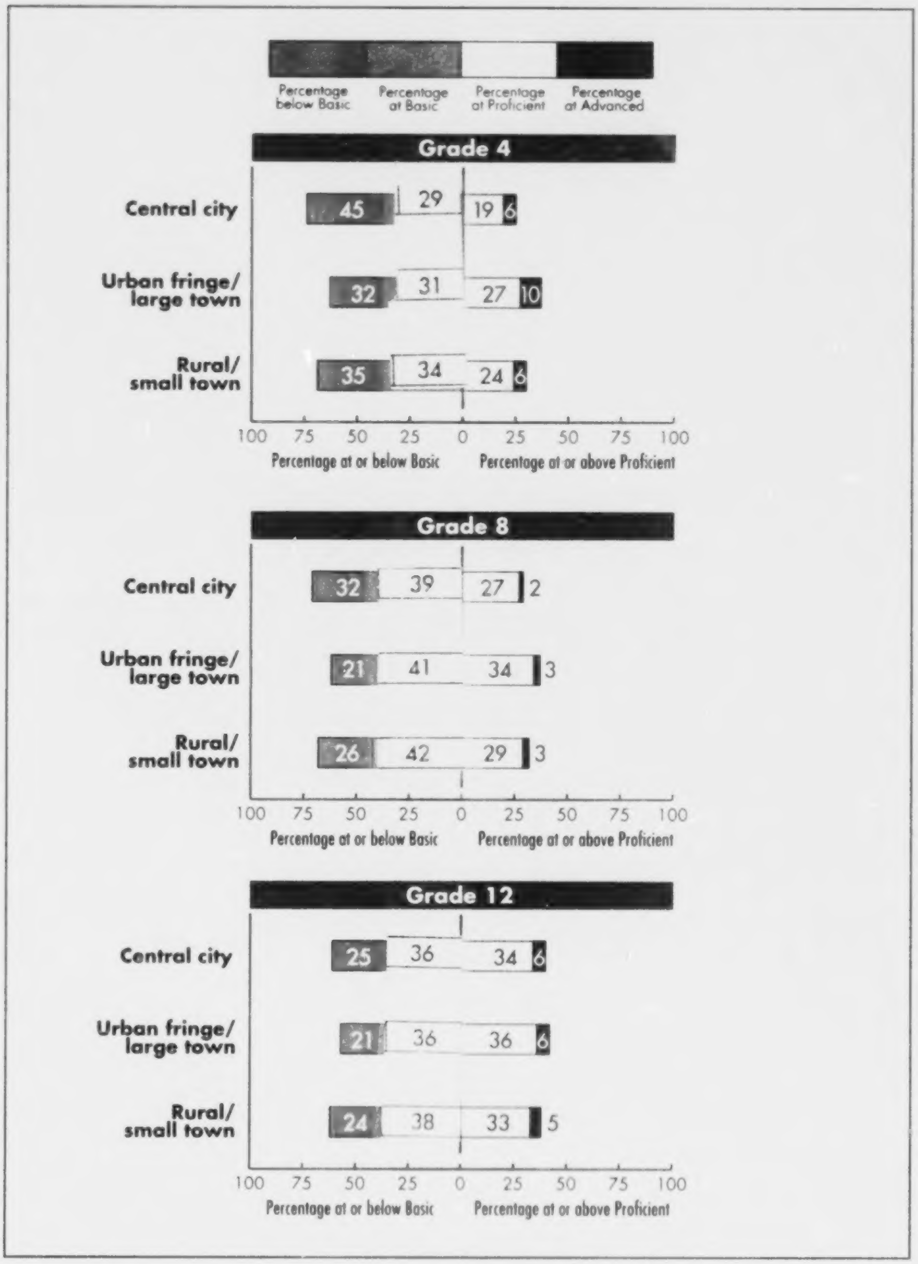
	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Central city	46	54	23	5	47	53	25	6	45	55	25	6
Urban fringe/ large town	34	66	32	8	33	67	35	9	32	68	37	10
Rural/small town	35	65	29	6	40	60	28	6	35	65	30	6
Grade 8												
Central city	38	62	23	2	34	66	27	3	32	68	29	2
Urban fringe/ large town	26	74	34	4	27	73	32	3	21+	79+	38+	3
Rural/small town	29	71	28	2	31	69	29	3	26	74	32	3
Grade 12												
Central city	23	77	38	4	25	75	37	4	25	75	40	6
Urban fringe/ large town	19	81	43	4	24	76	38	5	21	79	42	6*
Rural/small town	21	79	39	3	28	72	33	4	24	76	38	5

* Indicates that the percentage in 1998 is significantly different from that in 1992.
+ Indicates that the percentage in 1998 is significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.5

Percentage of students within each achievement level range by type of location: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Eligibility for the Free/Reduced-Price Lunch Program

Table 3.6 and Figure 3.6 present achievement level results for each grade by students' eligibility for the free/reduced-price lunch component of the National School Lunch Program (NSLP). Among fourth graders who were eligible for the program in 1998, 58 percent were below the *Basic* level and 2 percent were at the *Advanced* level compared to 27 and 10 percent, respectively, for those not eligible for free/reduced-price lunch. Across the three grades, higher performance was observed for students not eligible for the program.

Table 3.6

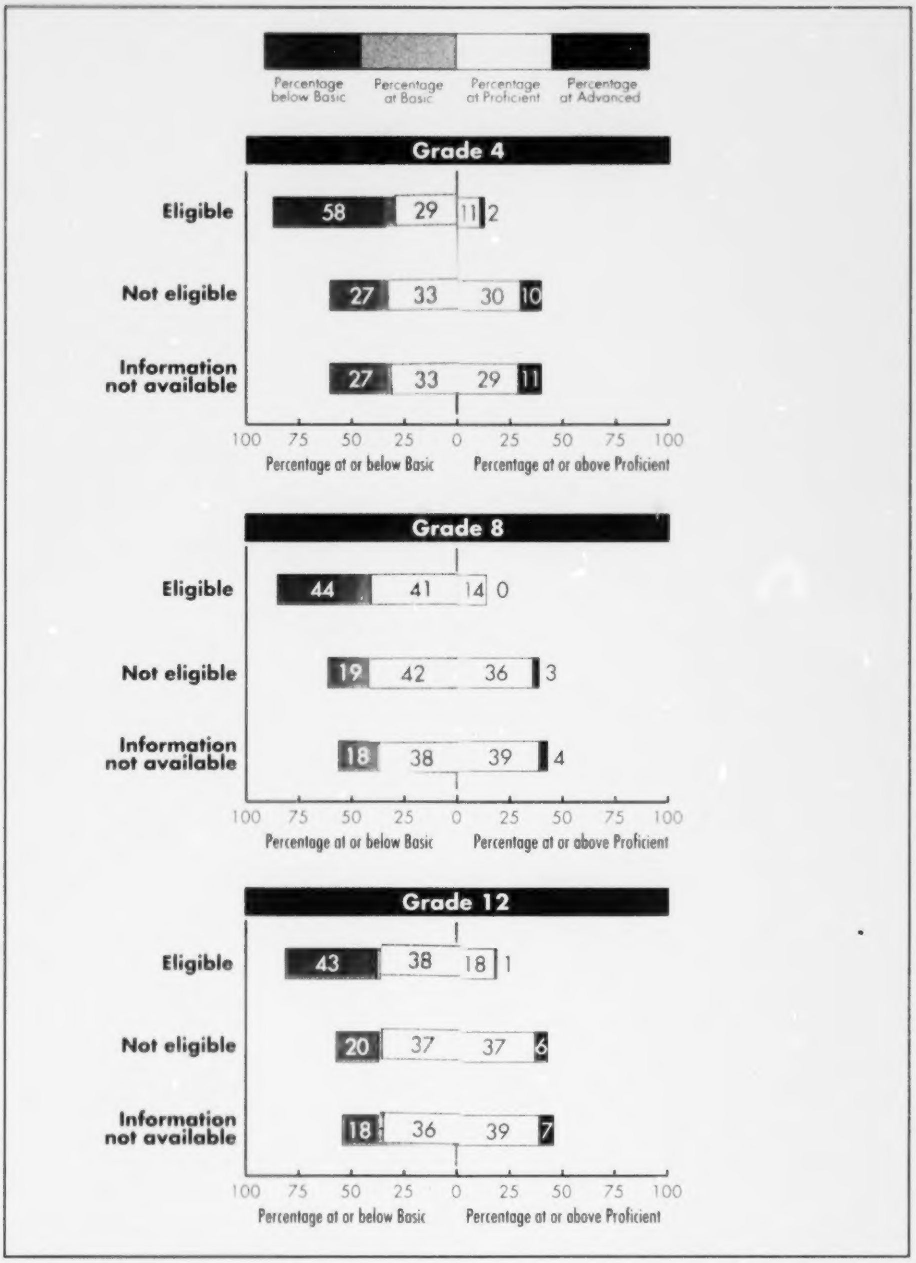
Percentage of students at or above reading achievement levels by free/reduced-price lunch program eligibility: 1998

	1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4				
Eligible	58	42	13	2
Not eligible	27	73	40	10
Information not available	27	73	40	11
Grade 8				
Eligible	44	56	15	0
Not eligible	19	81	39	3
Information not available	18	82	44	4
Grade 12				
Eligible	43	57	19	1
Not eligible	20	80	43	6
Information not available	18	82	46	7

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 3.6

Percentage of students within each achievement level range by free/reduced-price lunch program eligibility: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Type of School

The percentage of public and nonpublic school students at all three grades who were at or above each of the achievement levels is shown in Table 3.7. Shown in Figure 3.7 are the percentages of students within each achievement level range by type of school. To further examine these differences, nonpublic schools were subcategorized into Catholic and other nonpublic schools.

Since 1992, the percentages of students attending public schools who were at or above the *Basic* and *Proficient* levels increased at grade 8. These 1998 percentages also represented an increase since 1994. Correspondingly, the percentage of grade 8 public school students below the *Basic* level was lower in 1998 than in the previous assessments. At grade 12, 5 percent of students in public schools reached the *Advanced* level; this represented an increase since 1992. Between 1992 and 1998, the percentage of grade 8 students who attended nonpublic Catholic schools and who were at or above the *Basic* level increased.

In 1998, the percentages of fourth-, eighth-, and twelfth-grade students attending nonpublic schools who were at or above the *Basic* and *Proficient* levels were greater than that for students attending public schools. Similar differences were seen at the *Advanced* level for all three grades: nonpublic school students outperformed their public school peers.

At grade 4, public school students were outperformed by Catholic and other nonpublic school students at all achievement levels. The same differences were found for the percentages of grade 8 students at or above the *Basic* and *Proficient* levels. Also at grade 8, a higher percentage of Catholic than public school students reached the *Advanced* level. At grade 12, public school students were outperformed by their Catholic school peers at the *Basic* and *Proficient* levels. At all three grades and for all achievement levels, no performance differences were found between Catholic and other nonpublic school students.

Table 3.7

Percentage of students at or above reading achievement levels by type of school: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Public	40	60	27	6	41	59	28	7	39	61	29	6
Nonpublic	21	79	45	12	23	77	43	13	22	78	46	14
Nonpublic: Catholic	24	76	41	10	24	76	42	12	21	79	46	13
Other nonpublic	16!	84!	53!	15!	20	80	46	14	24	76	46	16
Grade 8												
Public	33	67	27	2	33	67	27	2	28*+	72*+	31*+	2
Nonpublic	13	87	48	7	11	89	49	6	9	91	54	5
Nonpublic: Catholic	16	84	45	6	12	88	49	6	9*	91*	53	5
Other nonpublic	10	90	54	10	11	89	50	7	9	91	54	5
Grade 12												
Public	22	78	37	3	27	73	35	4	24	76	39	5*
Nonpublic	8	92	60	9	13	87	52	8	13	87	54	9
Nonpublic: Catholic	7	93	59	8	15	85	47	6	13	87	54	8
Other nonpublic	11	89	61	12	11	89	59	11	13	87	53	9

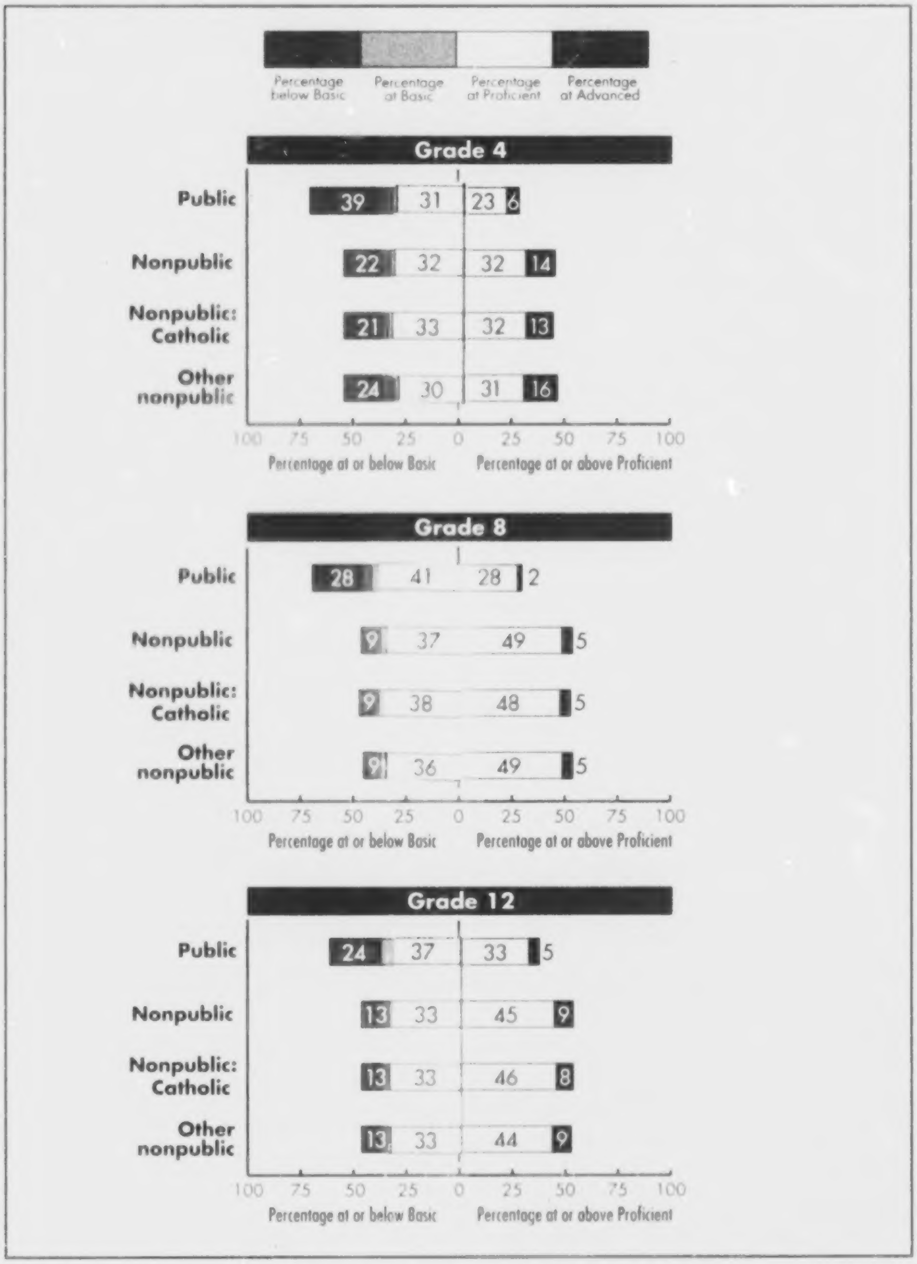
* Indicates that the percentage in 1998 is significantly different from that in 1992.
+ Indicates that the percentage in 1998 is significantly different from that in 1994.

! Interpret with caution any comparisons involving this statistic. The nature of the sample does not allow accurate determination of the variability of this value.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 3.7

Percentage of students within each achievement level range by type of school: 1998



NOTE: Percentages may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Summary

This chapter presented achievement level results for selected subgroups of fourth, eighth, and twelfth graders in the 1998 reading assessment. Where possible, 1998 results were compared to results from the 1994 and 1992 assessments. Generally, the results of subgroups of students reflected the overall achievement level results discussed in Chapter 1. For example, no significant changes from 1992 or 1994 were observed in the 1998 national results for fourth graders attaining any of the achievement levels. Similarly, no significant changes were observed for any subgroup of fourth graders, except for an increase since 1994 in the percentage of fourth-grade students in the Northeast who performed at or above the *Basic* level. The other major findings reported in this chapter are summarized below.

Among eighth graders, the percentages of male and female students who were at or above the *Basic* and *Proficient* levels were higher in 1998 than in 1992. Both White and Black students showed increases since 1994 in the percentages attaining at least the *Basic* level, and White students showed an increase in the percentage at or above *Proficient*. For eighth graders who reported that at least one parent had graduated from college, the percentages of students at or above the *Basic* and *Proficient* levels were greater in 1998 than in 1994. Among students in urban fringe/large town schools, the percentages of students at or above *Basic* and *Proficient* were also higher than in 1994. Public school students showed increases in the percentages of students at or above the *Basic* and *Proficient* levels since 1994 and 1992. For students attending Catholic schools, the percentage who performed at or above the *Basic* level was greater in 1998 than in 1992.

Among twelfth graders, female students showed increases since 1994 in the percentage who were at or above the *Proficient* level, and since 1992 in the percentage who were at the *Advanced* level. The results were mixed for male twelfth graders; the percentage who performed at the *Advanced* level was higher in 1998 than in 1994, but the percentage who performed at or above *Basic* was lower than in 1992. The percentage of White students who were at or above the *Proficient* level increased since 1994, and at the *Advanced* level since 1992. No other racial/ethnic group among twelfth graders showed significant changes in achievement level performance. For students who reported that at least one parent had graduated from college, an increase was observed between 1992 and 1998 in the percentage at the *Advanced* level. For students in urban fringe/large town schools and for public school students, the percentages who performed at the *Advanced* level were greater in 1998 than in 1992.

CHAPTER 4

School and Home Contexts for Reading

Overview

This chapter looks at two contexts in which children have the opportunity to learn to enjoy and to be challenged by the activity of reading: school and home. Within these environments resides the possibility for boundless activity with the language and ideas contained in books. Whether one reads to enlarge emotional experiences, to acquire necessary information, or to accomplish practical concerns, to read at all requires a sense of competency and anticipated satisfaction.[1] This chapter presents contextual information on school and home environments that appear to contribute to the development of competent readers, at ease with language and eager to read.

Results from the 1998 assessment and comparisons to 1994 and 1992 are presented for students' reports about their instructional and home experiences. The percentage of students who selected each response option, scale scores, and achievement level results are presented for each contextual variable reported. Although it is possible to examine the relationship between students' reading performance and various home and school factors, it is not possible to establish causal links. A relationship that exists between achievement and another variable does not reveal its underlying cause, which may be a complex interaction of numerous factors.

Reading in and for School

Students at all three grades were asked to report on the amount of reading required of them in school and for homework, and on how often in school they wrote long answers to questions that involved reading. Eighth- and twelfth-grade students were asked to report on how frequently they were asked by their teachers to explain or discuss what they read in school.

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[1] Wilhelm, J.D. (1997). *"You gotta be the book": Teaching engaged and reflective reading with adolescents.* New York, NY: Teacher's College Press.

Pages Read Each Day in School and for Homework. Becoming a competent reader may require daily engagement with the written word.[2] Having time to read in school may not only increase fluency, but may also encourage literacy habits and literary appreciation.[3] While the amount of reading time may vary depending on instructional goals and individual student needs, most students are required to read on a daily basis in school and for homework.

Students' reports on the number of pages read daily in school and for homework are presented in Table 4.1. As demonstrated in the 1998 results, there is a consistent relationship between the amount of reading done for school and homework and students' reading scale scores. Students who reported that they read more pages each day demonstrated higher reading performance. At grades 4, 8, and 12, students who reported reading 11 or more pages each day for school and for homework had higher average reading scores than students who reported reading 10 or fewer pages each day. In addition, reading 6 to 10 pages each day was associated with higher average scores than reading 5 or fewer pages. These results do not necessarily suggest that more homework is related to higher reading scores; what they do indicate is that students who reported more reading at school and for homework demonstrated higher reading performance.

In 1998, there was an increase since 1994 in the percentages of students at both grades 8 and 12 who reported reading 11 or more pages each day. At eighth grade, the percentage of students who reported reading this many pages was also higher than that in 1992. Likewise, the percentages of eighth- and twelfth-grade students who reported reading 5 or fewer pages on a daily basis for both school and homework declined since 1994. At eighth grade, this decline was also seen in relation to 1992. Among fourth graders, there was no significant change from 1994 or 1992 in students' reports on the number of pages they read each day in school and for homework.

Figure 4.1 displays the percentages of students at each grade in 1992, 1994, and 1998 who reported reading 11 or more pages each day in school and for homework. While 57% of fourth graders reported reading 11 or more pages a day, it is worth pointing out that less than half of eighth and twelfth graders reported reading this many pages daily. In interpreting these findings, it is important to consider the length and format of reading materials that may typically be read by students at each grade. For example, the pages read by fourth graders are more likely to contain less text and more pictures in comparison to the pages read by older students.

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[2] Fielding, L.G., & Pearson, P.D. (1994). Reading comprehension: What works. *Educational Leadership, 51*(5), 62-68.

[3] Atwell, N. (1998). *In the middle: New understandings about writing, reading, and learning.* Portsmouth, NH: Boynton/Cook Publishers, Inc.

Table 4.1

Students' reports on the number of pages read each day in school and for homework: 1992, 1994, and 1998

Pages read for school and homework	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
11 or more pages									
Percentage	56	54	57	38	37	42*+	45	39	43+
Scale score	222	220	221	267	267	270	302	298	301
Percentage at or above Proficient	34	34	35	36	37	40	52	49	51
6 to 10 pages									
Percentage	23	23	22	30	28	27*	24	24	23
Scale score	217	214	217	262	262	264	290	288	290
Percentage at or above Proficient	27	29	31	29	30	33	36	35	38
5 or fewer pages									
Percentage	21	23	21	32	35	30*+	31	36	33+
Scale score	203	201	207	251	251	256*+	281	276	279
Percentage at or above Proficient	17	20	21	22	22	25	27	24	28

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992.

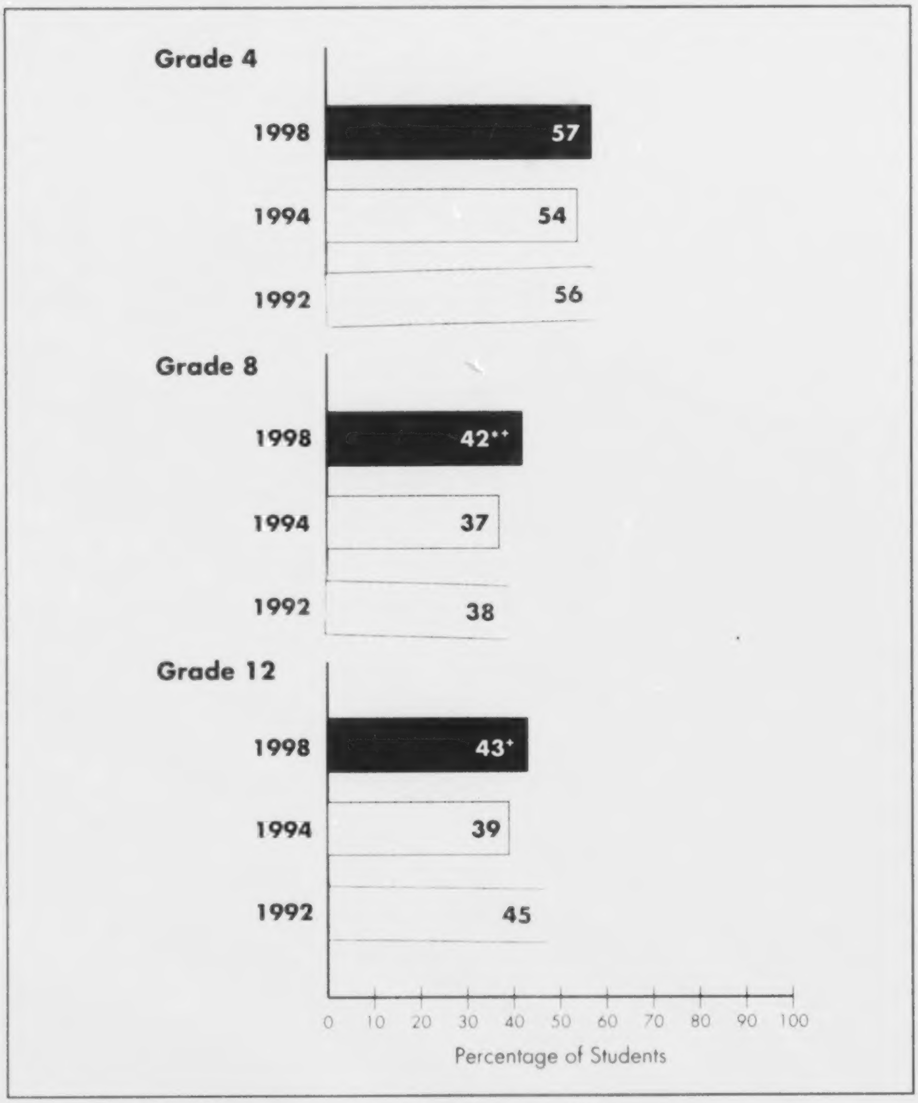
+ Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.1

Percentage of students who reported reading "11 or more pages" each day for school and for homework: 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1992.
+ Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Explaining and Discussing Reading in School. Giving students the opportunity to explain their understanding and to express their ideas of what they read can reinforce their engagement with reading.[4] Being able to articulate what they have understood when reading texts can clarify and enlarge students' understanding of the text's topic. Being encouraged to express and discuss various interpretations not only enlarges the particular reading experience, but also contributes to developing lifelong literacy habits. The ability to talk about what one reads in books, articles, or newspapers informs and enriches many aspects of professional and personal life.[5]

Eighth- and twelfth-grade students in the NAEP assessment were asked how frequently their teachers have them explain or support their understanding and discuss various interpretations of what they read in school. A summary of student responses for 1992, 1994, and 1998 is presented in Table 4.2.

At both grades, the 1998 results provide some indication of a positive relationship between these two instructional activities and average reading scores. At both eighth and twelfth grades, students who reported being asked to explain their understanding or to discuss interpretations of what they read at least once or twice a week had higher average scores than their peers who reported doing so less than weekly. Additionally, twelfth graders who reported that these activities occurred almost every day had higher average scores than their peers who reported being asked to do so less frequently.

At the eighth grade, the percentage of students who reported being asked to explain their understanding or to discuss interpretations of what they read almost every day was higher in 1998 than in 1994 or 1992. Also, the percentage of eighth graders who reported explaining their understanding once or twice a week increased since 1994. At the twelfth grade, the percentage of students who reported being asked to explain their understanding of what they have read almost every day was higher in 1998 than in 1994. Twelfth graders' reports regarding how frequently they are asked to discuss interpretations revealed no clear pattern of increase or decrease across the assessment years.

Figures 4.2a and 4.2b display the percentages of students who reported being asked to engage in these instructional activities at least once a week — the combined percentages of students who responded "almost every day" or

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[4] Durrant, C., Goodwin, L., & Watson, K. (1990). Encouraging young readers to reflect on their processes of response: Can it be done, is it worth doing? *English Education*, 22, 211-219.

[5] Gambrell, L.B., & Almasi, J.F. (Eds.). (1998). *Lively discussions: Fostering engaged reading.* Newark, DE: International Reading Association.

Paratore, J.R., & McCormack, R.L. (Eds.). (1997). *Peer talk in the classroom: Learning from research.* Newark, DE: International Reading Association.

Guice, S., & Allington, R. (1994). *It's more than reading real books! Ten ways to enhance the implementation of literature-based instruction.* National Research Center on Literature Teaching and Learning. Washington, DC: Office of Educational Research and Improvement.

Table 4.2

Students' reports on how frequently teachers ask them to explain their understanding and discuss various interpretations of what they read in school: 1992, 1994, and 1998

	Grade 8			Grade 12		
Explain your understanding of what you have read	1992	1994	1998	1992	1994	1998
Almost every day						
Percentage	20	21	26*+	29	28	32+
Scale score	262	263	265	302	298	300
Percentage at or above Proficient	32	32	34	53	48	50
Once or twice a week						
Percentage	37	35	37+	40	37	38
Scale score	264	264	268*+	294	289	294*
Percentage at or above Proficient	33	33	37*	41	38	42
Less than weekly						
Percentage	43	45	37*+	31	35	30*
Scale score	257	257	260*+	282	279	280
Percentage at or above Proficient	26	27	30*	28	27	29
Discuss interpretations of what you have read						
Almost every day						
Percentage	16	16	18*+	27	27	29
Scale score	261	264	266*	302	299	300
Percentage at or above Proficient	30	34	36*	53	49	50
Once or twice a week						
Percentage	33	30	32	36	34	34*
Scale score	263	262	267*+	294	289	294*
Percentage at or above Proficient	32	31	36*	42	37	44+
Less than weekly						
Percentage	51	54	50+	36	39	38
Scale score	259	259	262+	284	280	282
Percentage at or above Proficient	28	28	31	30	29	31

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992.

+ Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

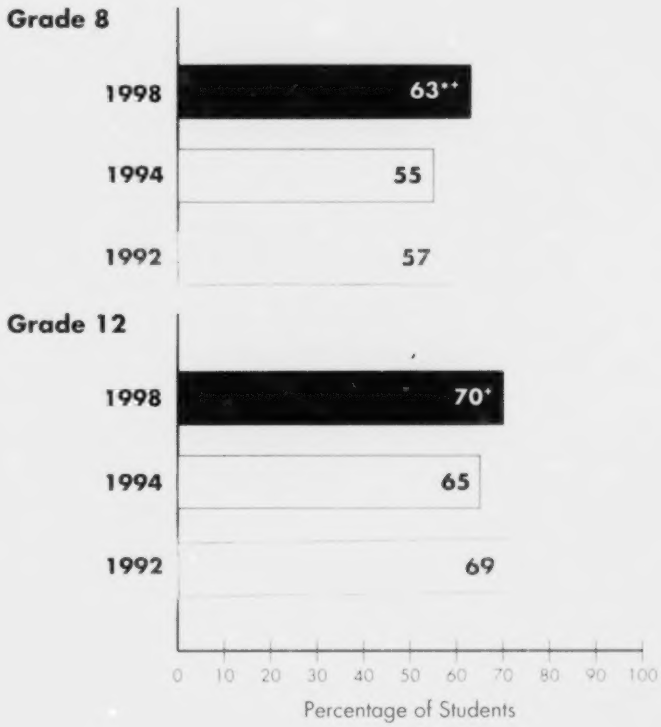
NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

"once or twice a week" to these questions, as presented in Table 4.2. The combined percentages reveal that at least half of all eighth and twelfth graders reported engaging in these instructional activities at least weekly. At both grades, the combined percentages reflect an increase in the frequency of eighth- and twelfth-grade students being asked to explain their understanding of what they read, and the frequency of eighth graders being asked to discuss interpretations of what they read.

Figure 4.2a

Percentage of students who reported being asked to explain their understanding of what they read "At least once a week": 1992, 1994, and 1998



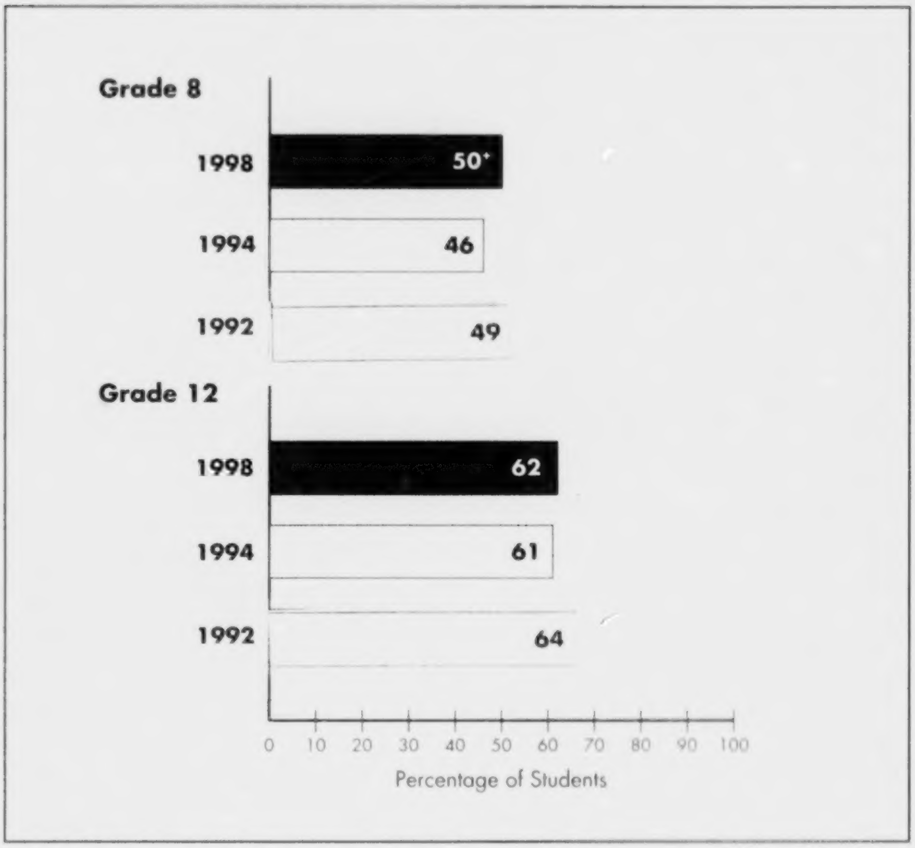
* Indicates that the percentage in 1998 was significantly different from that in 1992.

+ Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.2b

Percentage of students who reported being asked to discuss interpretations of what they read "At least once a week": 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Students' reports on the frequency with which they write long answers to questions that involved reading. While the NAEP assessment in reading comprises both multiple-choice and constructed-response questions, the majority of students' test time is spent answering the constructed-response questions. It is, therefore, relevant to consider the degree to which students are prepared by classroom practices to demonstrate understanding by writing in response to reading materials.

Students were asked how frequently during the school year they had been asked to write long answers to questions on tests and assignments that involved reading. A summary of students' responses is presented in Table 4.3.

At all three grades, a relationship between reading achievment and writing long answers about reading for tests and assignments is generally supported by findings from the 1998 NAEP assessment. Students who reported engaging in this activity on a weekly or monthly basis had higher average scores than students who reported doing so only once or twice a year or less.

Comparisons of average scores in 1998 between students who reported weekly and monthly engagement in this activity reveal a different pattern across the three grades. At grade 4, students who reported engaging in this activity at least once a week had a lower average score than students who reported doing so once or twice a month. At grade 8, there was no significant difference between the average scores of students reporting writing about reading on a weekly or monthly basis. However, at grade 12, a higher average score was observed for those students who reported being asked to write long answers about reading at least once a week, compared to their peers who reported doing so once or twice a month.

Thus, the 1998 results suggest that having students write long answers to questions about reading on tests and assignments has a slightly different relationship to reading performance at each grade. Although at least moderate use of this activity demonstrated a positive relationship with reading scores at all three grades, only among twelfth graders did the most frequent use of the activity (at least once a week) correspond with the highest reading performance.

Students' reports about being asked to write long answers to questions that involved reading indicated an increase in the frequency of this activity at grades 4 and 8. The percentage of fourth- and eighth-grade students who reported that this activity occurred at least once a week was higher in 1998 than in 1994. Also, among eighth graders, an increase was seen in relation to 1992. Correspondingly, decreases were observed in the percentages of fourth and eighth graders who reported engaging in this activity less than monthly. At grade 12, there were no significant changes in students' reports regarding the frequency of this activity.

Table 4.3

Students' reports on the frequency with which they write long answers to questions on tests or assignments that involved reading: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
At least once a week									
Percentage	51	48	53+	41	41	45*+	46	45	44
Scale score	220	217	218	262	263	265	299	294	297
Percentage at or above Proficient	31	30	31	31	33	34	48	43	47
Once/twice a month									
Percentage	28	31	30*	38	40	39	37	38	39
Scale score	221	221	223	263	263	267*+	292	289	292
Percentage at or above Proficient	32	36	36	32	31	36+	40	37	40
Once/twice a year									
Percentage	13	12	10*+	14	14	12*+	13	12	13
Scale score	209	209	212	259	257	260	281	274	281*
Percentage at or above Proficient	23	27	28	27	26	29	26	23	29
Never/hardly ever									
Percentage	9	9	8+	6	6	4*+	5	4	4
Scale score	202	198	199	239	235	237	267	255	257*
Percentage at or above Proficient	15	18	16	13	12	14	15	10	15

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992.
+ Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

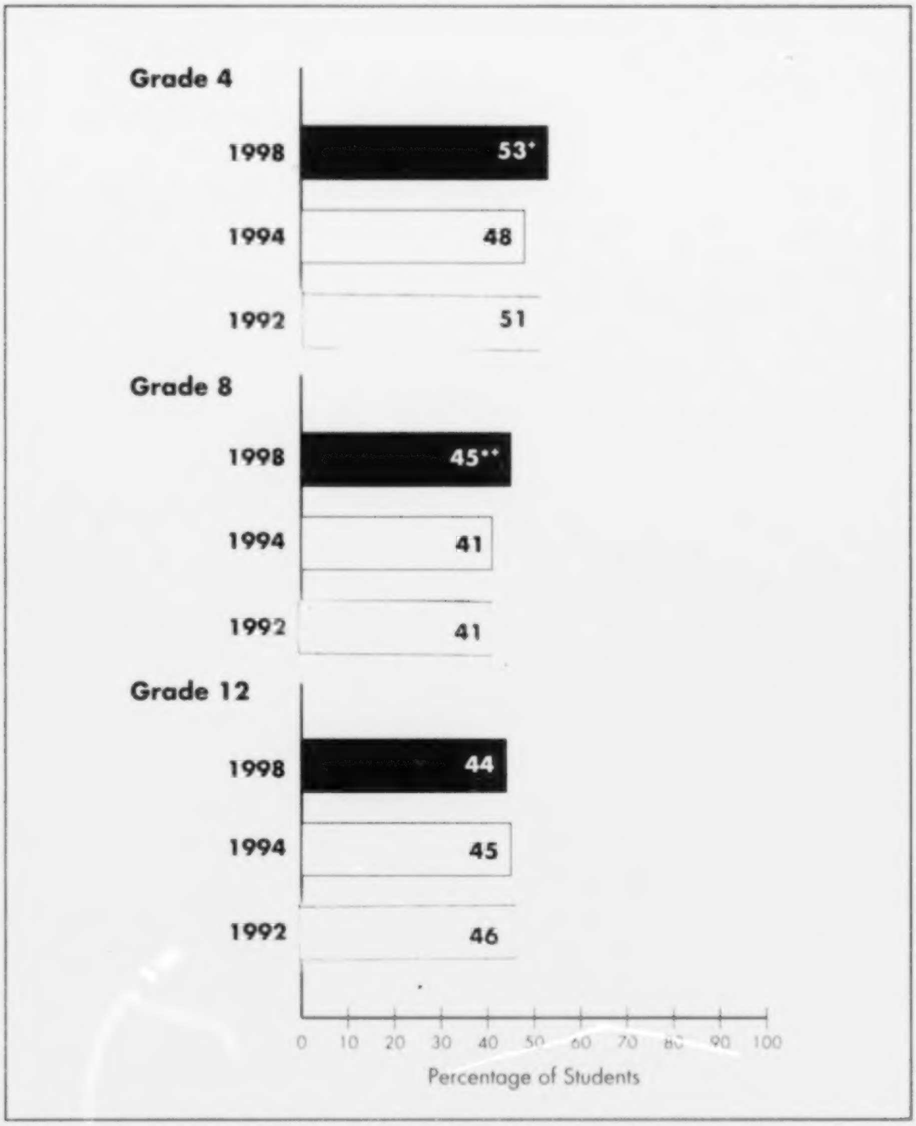
NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.3 displays the percentages of fourth, eighth, and twelfth graders across the three assessment years who reported being asked at least once a week to write long answers to questions that involved reading. The figure draws attention to the increased frequency of this activity observed at grades 4 and 8, and the lack of an increase at grade 12.

Figure 4.3

Percentage of students who reported writing long answers to questions on tests or assignments that involved reading "At least once a week" : 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1992.

** Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Students' reports on how frequently their teachers give them time to read books of their own choosing. The importance of affective processes such as interest and motivation to students' ability to comprehend text and to their overall literacy development has become a central focus in research studies and efforts to improve reading instruction.[6] Some theorists have suggested that interest in the material and motivation to understand it encourages a level of engagement that promotes deeper levels of comprehension.[7] Providing students with an opportunity to read books of their own choosing as a strategy for literacy development has become a part of instructional practice.[8] Students in the 1998 NAEP assessment were asked how often they are given time by their teacher to read books they have chosen themselves. A summary of students' responses is presented in Table 4.4.

The relationship between this instructional activity and reading performance varies across the three grades. At grade 4, the relationship is a positive one wherein more frequent reading of self-selected books was associated with higher average reading scores. Fourth graders who reported being given time for this activity almost every day outperformed their peers who reported being given time to do so less often. Also, the performance of fourth-grade students who reported reading books of their own choosing once or twice a week was higher than that of students who reported doing so less than weekly.

Although a positive relationship was observed at grade 4 between this activity and reading scores, at grade 8 no significant relationship was observed. Moreover, at grade 12 the relationship appeared to be a negative one: students who reported reading books of their own choosing almost every day or once or twice a week had lower average scores than students who reported doing so less than weekly. The low percentages of twelfth graders who reported being given time daily or weekly to read books of their own choosing indicate that this instructional approach is less prevalent at the twelfth grade.

Students' reports on being given time to read books they have chosen indicate some increase in the frequency of this activity at all three grades. At grade 4, the percentage of students who reported that this activity occurred almost every day was higher in 1998 than in 1994, while at grades 8 and 12, the percentage in 1998 was higher than that in 1992.

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[6] Cramer, E., & Castle, M. (Eds.). (1994). *Fostering the love of reading: The affective domain in reading education.* Newark, DE: International Reading Association.

[7] Guthrie, J.T. (1996). Educational contexts for engagement in literacy. *The Reading Teacher, 49*(6), 432–445.

Sweet, A.P., & Guthrie, J.T. (1996). How children's motivation relates to literacy development and instruction. *The Reading Teacher, 49*(8), 660–662.

[8] Raphael, T.E., & McMahon, S.I. (1994). Book club: An alternative framework for reading instruction. *The Reading Teacher, 48*(2), 102–116.

Table 4.4

Students' reports on the frequency with which their teachers give them time to read books of their own choosing : 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Almost every day									
Percentage	55	52	56+	15	17	21*	4	5	6*
Scale score	224	221	224	261	261	263	279	277	282
Percentage at or above Proficient	35	36	36	29	31	31	24	27	32
Once/twice a week									
Percentage	27	29	27+	25	25	26	9	11	11*
Scale score	215	214	217	260	258	263*	277	278	283
Percentage at or above Proficient	26	27	30	29	27	32	22	27	32*
Less than weekly									
Percentage	18	18	18	60	57	53*	87	84	83
Scale score	205	207	208	261	262	265	295	290	293*
Percentage at or above Proficient	19	24	21	30	31	35*	43	39	43*

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992.

+ Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

NOTE: Percentages may not add to 100 due to rounding.

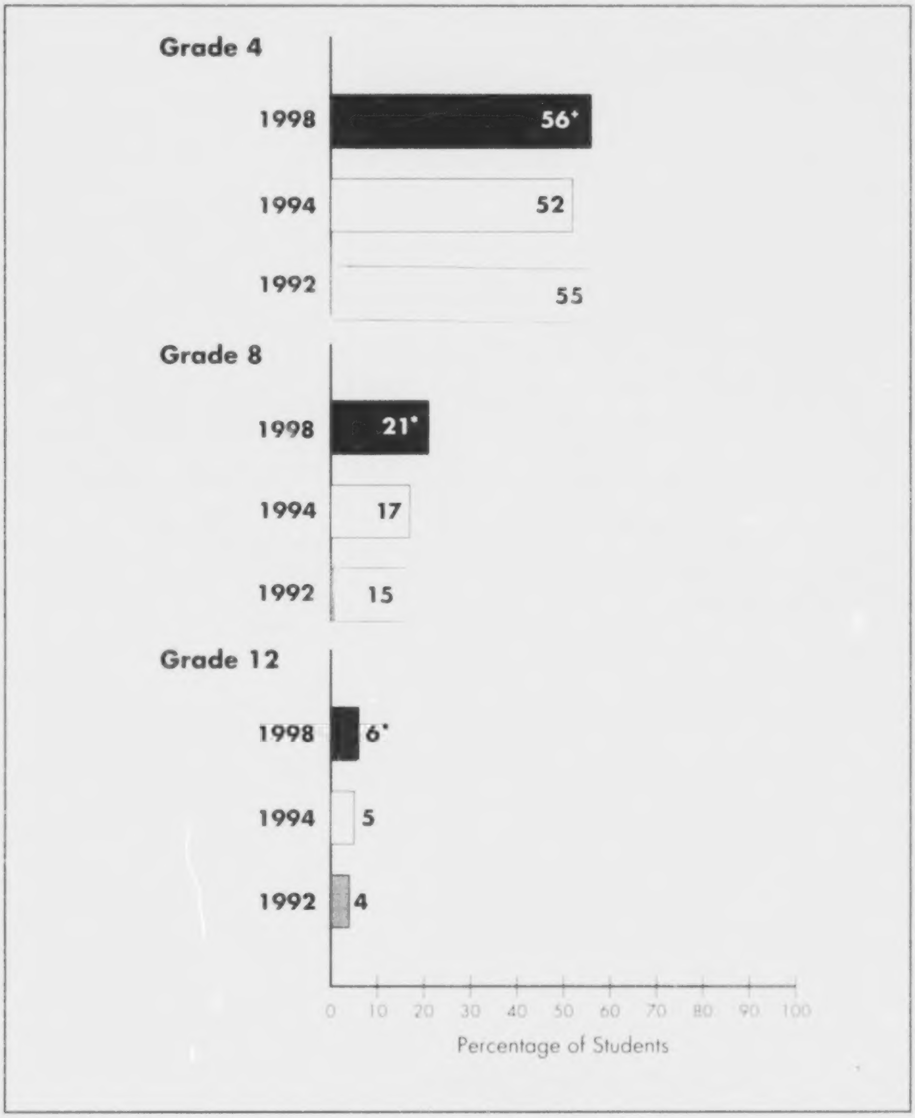
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.4 displays the percentages of students at each grade across the three assessment years who reported being given time by their teachers almost every day to read books they have chosen. The figure makes markedly clear that this instructional approach is used much more predominantly at grade 4 than at the higher grades. Over half of the fourth graders in each assessment year reported engaging in this activity almost every day, suggesting that elementary teachers may find this to be an important instructional strategy for engaging younger readers.

Figure 4.4

THE NATION'S REPORT CARD naep

Percentage of students who reported being given time to read books of their own choosing "Almost every day": 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1992.

+ Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Reading Activities Outside of School and Home Support for Literacy

Home activities that extend experiences at school contribute to the attainment of competency and to the progress of students' literacy development. The achievement of reading skills is neither limited to the classroom setting nor to the rather solitary nature of reading as an activity in itself. To grow as readers, students need the occasion to talk about what they read with others in home environments that encourage literate discourse as an integral part of daily life.[9]

This section considers the connection between literacy-related activities outside of school and students' reading performance on the NAEP assessment. Also considered is the relation between students' reading performance and the amount of television they watch on a daily basis.

Literacy Discussions with Family or Friends. The more often students discuss their studies at home and the more often they discuss what they read with others, the more their literacy development is encouraged and enriched. When the communal experience of schooling or the private experience of reading on one's own is shared with family or friends, what might have been mere regulated learning is recognized as a part of everyday life. Research studies have documented the higher achievement of students whose parents have taken an active role in their learning.[10] Recognizing the importance of family support for literacy, recent education reform efforts, including Goals 2000, have sought to strengthen cooperation between parents and schools.

Students in the 1992, 1994, and 1998 NAEP reading assessments were asked how frequently they discuss their studies at home and how frequently they talk about their reading with family or friends. Student responses are summarized in Table 4.5.

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[9] Baker, L., Allen, J., Shockley, B., Pellegrini, A., Galda, L., & Stahl, S. (1996). Connecting school and home: Constructing partnerships to foster reading development. In L. Baker, P. Afflerbach, & D. Reinking (Eds.), *Developing engaged readers in school and home communities* (pp. 21–41). Hillsdale, NJ: Erlbaum.

[10] Christenson, S.L. (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly*, 7(3), 178–206.

Heller, L.R., & Fantuzzo, J.W. (1993). Reciprocal peer tutoring and parent partnership: Does parent involvement make a difference? *School Psychology Quarterly*, 22(3), 517–34.

Table 4.5

THE NATION'S REPORT CARD naep

Students' reports on the frequency with which they discuss their studies at home and talk about their reading with family or friends: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Discuss studies at home									
Almost every day									
Percentage	54	55	54	37	38	35	30	30	29
Scale score	221	219	220	269	269	272	298	296	299*
Percentage at or above Proficient	32	35	33	37	38	42	48	45	49
Once/twice a week									
Percentage	22	22	23	30	29	30	34	33	34
Scale score	220	215	222+	263	264	267*	295	292	295+
Percentage at or above Proficient	31	30	36+	31	32	37*	43	40	45
Once/twice a month									
Percentage	6	6	6	11	12	13*	16	14	15
Scale score	215	208	213	257	257	262	292	287	288
Percentage at or above Proficient	25	23	25	26	26	28	39	35	37
Never/hardly ever									
Percentage	17	17	18	21	21	22	20	23	22
Scale score	202	199	205+	247	250	252*	280	274	275*
Percentage at or above Proficient	15	15	19+	17	19	20	26	22	25
Talk about reading with family or friends									
Almost every day									
Percentage	26	28	27	13	12	10*+	17	16	16*
Scale score	215	213	211	263	262	263	298	296	300
Percentage at or above Proficient	27	28	25	33	34	35	49	47	51
Once/twice a week									
Percentage	36	36	35	28	28	26*	37	34	35*
Scale score	224	223	223	269	269	273*+	299	296	299
Percentage at or above Proficient	36	38	38	39	39	44	47	45	48
Once/twice a month									
Percentage	15	15	15	26	26	30*+	27	28	29
Scale score	219	214	222+	263	264	268*+	291	288	291+
Percentage at or above Proficient	30	29	36	32	32	37*	37	34	39
Never/hardly ever									
Percentage	23	21	23	32	34	34	19	22	21*
Scale score	209	207	214*+	249	249	254*+	278	270	273*
Percentage at or above Proficient	19	21	26	18	19	22*	23	18	23

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992. + Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

At all three grades in 1998, a positive relationship was observed between discussion of studies at home and student reading performance. Fourth, eighth, and twelfth graders who reported having such discussions almost every day or once or twice a week had higher average scores than their peers who reported discussing their studies only once or twice a month or less frequently. At the eighth and twelfth grades, having such discussions almost every day was associated with the highest average score.

According to student reports in 1998, there appears to be little change across assessment years in the percentages of students discussing their studies at home more or less frequently.

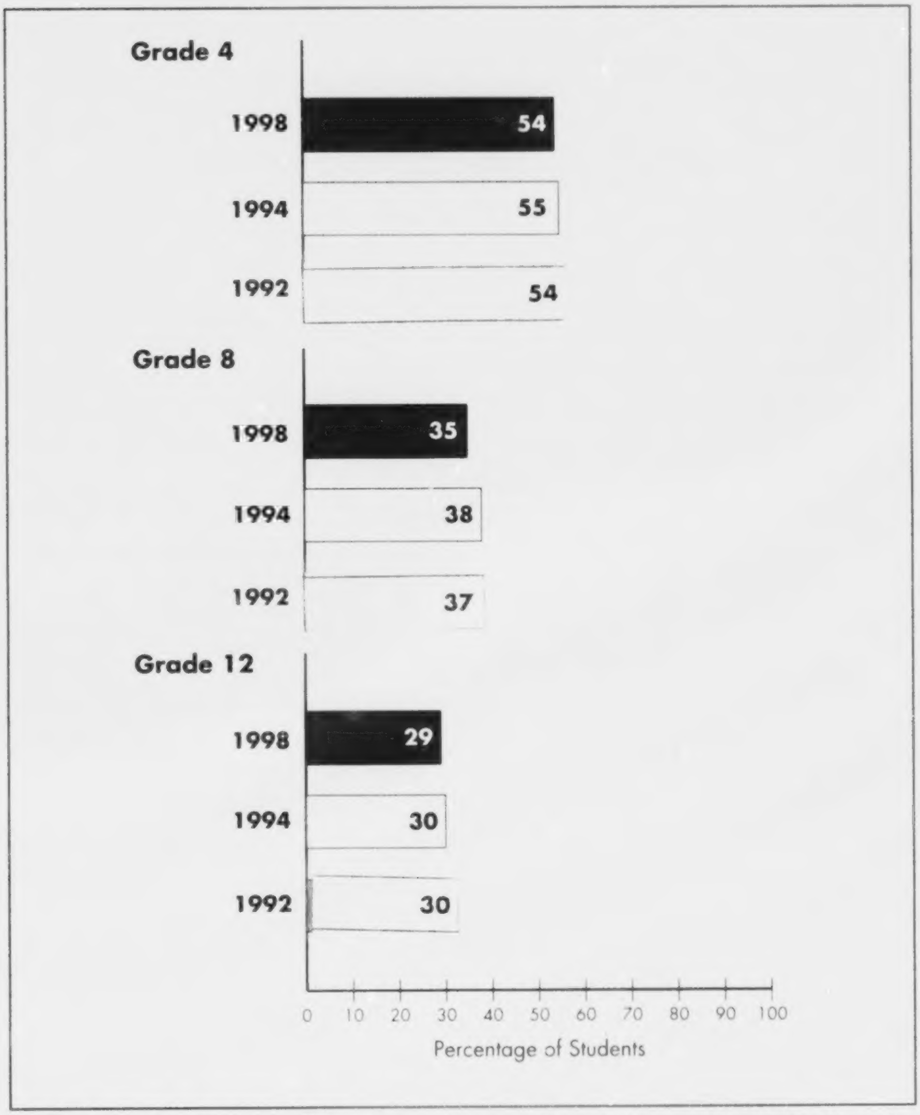
In addition to being asked about the frequency with which they discuss their studies in general, students were asked how often they talk about reading, in particular, with their family and friends. A mostly positive relationship was observed between talking about reading and student performance for grade 12 only. At all three grades, students who reported talking about their reading activities once or twice a week, or once or twice a month, had higher average scores than students who reported doing so rarely or never. Eighth and twelfth graders who reported talking about their reading on a weekly basis had higher scores than their peers who reported doing so monthly. However, for both fourth and eighth graders, talking about reading weekly or monthly was associated with higher scores than was engaging in this activity daily.

Students' reports about how often they talk about their reading with family and friends indicate a decrease in the frequency of this activity among eighth and twelfth graders. In 1998, the percentage of eighth- and twelfth-grade students who reported that they talked about their reading almost every day, or that they did so at least once or twice a week, was lower than in 1992. At eighth grade, the percentage of students reporting daily talk about reading was also lower in comparison to 1994. Among fourth graders, there was no significant change across assessment years in the frequency of this activity.

Figures 4.5a and 4.5b display the percentages of students who reported engaging in such literacy discussions almost every day. For both activities, the results indicate that fourth graders more frequently engage in discussions with family and friends about their schoolwork and about their reading experiences than do students in grades 8 and 12.

Figure 4.5a

Percentage of students who reported discussing their studies at home "Almost every day": 1992, 1994, and 1998

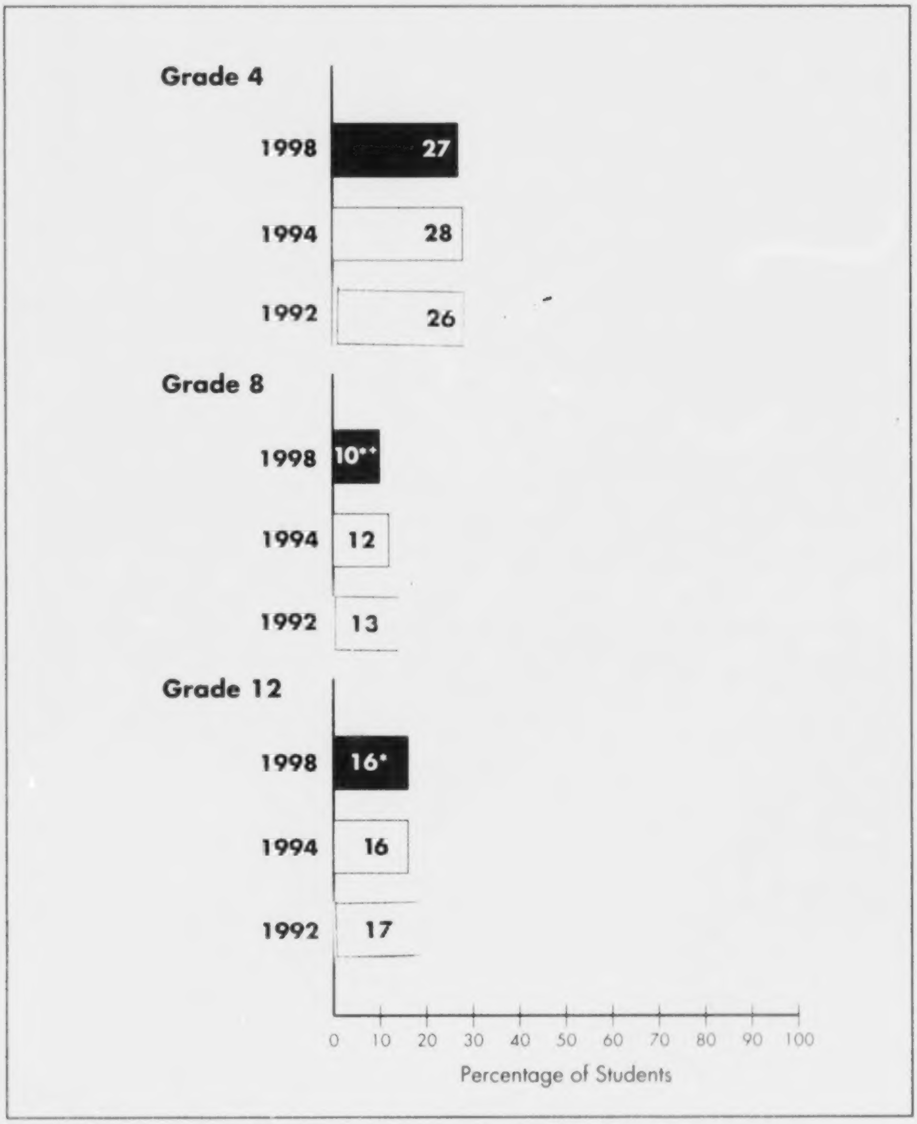


SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.5b

THE NATION'S REPORT CARD naep

Percentage of students who reported talking about their reading with family or friends "Almost every day": 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1992.

+ Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Television Viewing Habits. Extensive TV watching in American culture has long been criticized for inducing passivity and for taking time away from more actively literate pursuits. Research studies and previous NAEP reports have indicated a negative relationship between television viewing and reading achievement.[11] Of major concern is that time students spend watching television is time taken away from activities that contribute to literacy development.[12]

Students' reports of the amount of time they spend watching television are presented in Table 4.6. In 1998, results from the NAEP reading assessment once again reflect the negative relationship between time spent watching television and reading performance. At all three grades, students who reported watching three or fewer hours of television each day had higher average reading scores than students who reported watching four or more hours each day. The lowest average scores were observed for students in each grade who reported watching the most television daily, six hours or more. At the twelfth grade, the highest average reading score was observed for students who watched the least amount of television each day, one hour or less.

Given the negative relationship between amount of television viewing and reading performance, students' reports about this home factor are encouraging. In 1998, the percentages of students who reported watching the most television — 6 or more hours on a daily basis — decreased since 1994 at all three grades assessed. At grades 4 and 8, a decrease was also seen in relation to 1992. There was also a decline since 1992 in the percentages of fourth and twelfth graders who reported watching four to five hours of television a day. For fourth graders, this decline was also observed in comparison to 1994. Likewise, as shown in Figure 4.6, the percentages of fourth- and twelfth-grade students who reported watching only one hour or less of television daily have increased in comparison to students' reports in 1992 and 1994.

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[11] Campbell, J.R., Donahue, P.L., Reese, C.M., & Phillips, G.W. (1996). *NAEP 1994 reading report card for the nation and the states.* Washington, DC: National Center for Education Statistics.

Beentjes, J.W.J., and Van der Voort, T.H.A. (1988). Television's impact on children's reading skills: A review of the research. *Reading Research Quarterly, 23,* 389–413.

[12] Macias, A.H. (1993). Hide your TV and seek other interests. *PTA Today, 18*(7), 10–11.

Table 4.6

THE NATION'S REPORT CARD naep

Students' reports on the amount of time spent watching television each day: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Six hours or more									
Percentage	20	21	16*+	14	14	12*+	6	7	6*
Scale score	199	194	198	241	239	244+	271	264	260*
Percentage at or above Proficient	12	14	13	12	11	14	17	15	14
Four to five hours									
Percentage	22	22	19*+	27	27	26	20	18	17*
Scale score	216	216	216	258	257	259	284	280	281
Percentage at or above Proficient	26	30	29	25	24	26	29	25	27
Two to three hours									
Percentage	40	38	41+	46	45	47	47	46	46
Scale score	224	222	223	265	265	269*+	293	289	292*
Percentage at or above Proficient	36	36	36	33	35	39*	41	37	41
One hour or less									
Percentage	19	19	24*+	13	14	15	27	29	31*+
Scale score	221	220	222	270	270	271	301	297	300+
Percentage at or above Proficient	34	35	35	42	42	44	52	48	52

* Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1992.

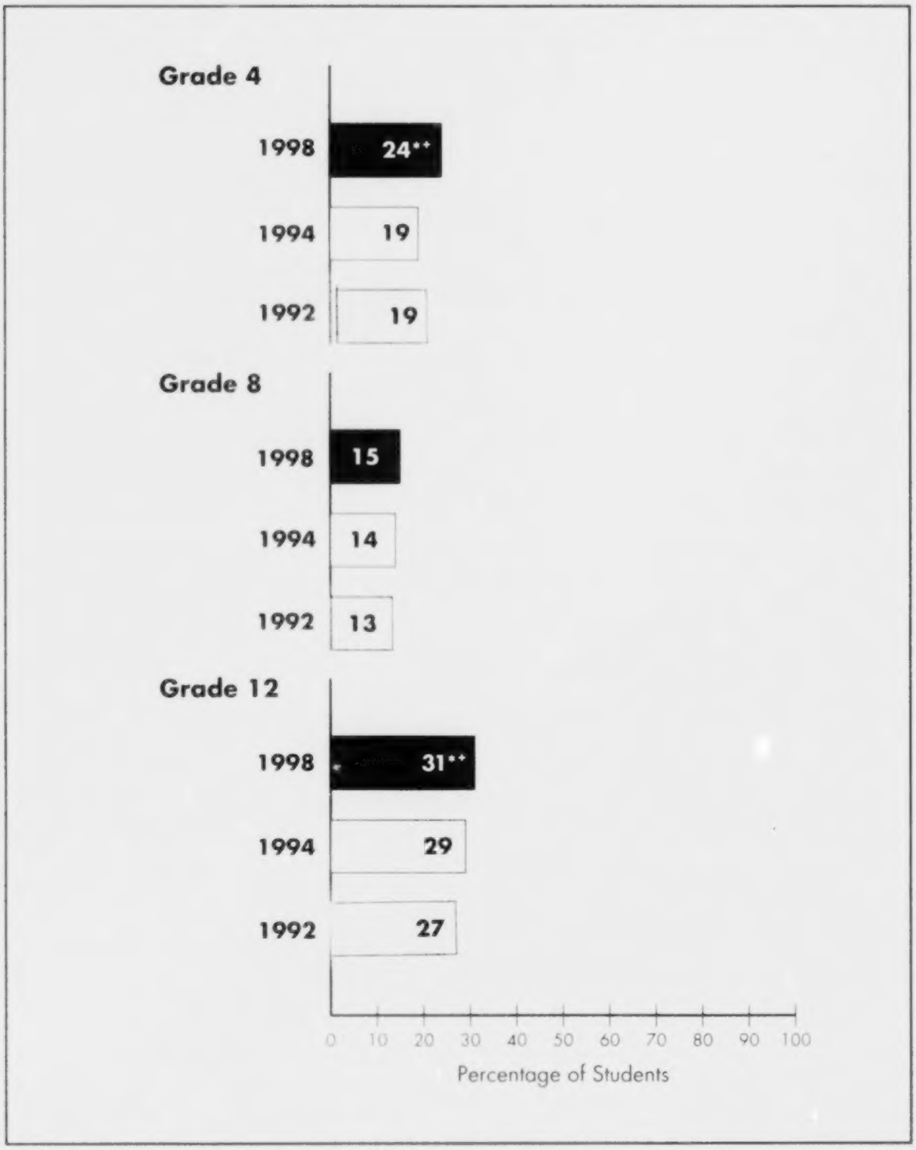
+ Indicates that the scale score (or percentage) in 1998 was significantly different from that in 1994.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 4.6

Percentage of students who reported watching "One hour or less" of television each day: 1992, 1994, and 1998



* Indicates that the percentage in 1998 was significantly different from that in 1992.

+ Indicates that the percentage in 1998 was significantly different from that in 1994.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Summary

The relationship between student responses to NAEP background questions about literacy-related activities and average scores observed in this chapter cannot be interpreted in a strictly causal sense. As many factors beyond those covered in this chapter may exert an influence on students' reading performance, the observations presented here can only be said to provide some insight into what aspects of school and home environments are related to reading achievement. If these environmental features directly influence achievement, then changes in these should lead to improved performance. It is not possible, however, from the data presented in this chapter to be certain whether such changes would result in improved performance. With this caution in mind, a few concluding comments can be made about what students do at school and home that may contribute to their reading performance.

In 1998, at all three grades assessed, a positive relationship was evident between certain activities and students' scale scores. Fourth, eighth, and twelfth graders who reported reading the most pages daily — 11 or more — for school and homework had the highest average scores. Discussion of studies at home also bore a positive relation to reading performance. Students who reported discussing their studies at home almost daily, or even weekly, had higher average scores than students who did so less often. Also, at all grades, students who reported talking about their reading once or twice a week, or once or twice a month, had higher average scores than those who reported rarely or never engaging in such talk.

As the students who participate in the NAEP assessment are at different stages of their reading development, it is unlikely that all the contextual factors considered here would exhibit an identical relation to student performance. As evidenced by 1998 results, certain instructional practices prove more directly related to reading scores at one grade rather than another. For fourth graders, being given time by teachers to read books of their own choosing had a positive relationship to reading performance. Fourth-grade students who reported being given this opportunity on a daily basis had the highest average scores. Results showed no significant relationship between reading self-selected books and average scores among eighth graders. By twelfth grade, student reports indicated that they are rarely asked to read books of their own choosing, and engaging in this activity daily or weekly was associated with lower average scores than doing so almost every day. While the instructional practice of having students write long answers to questions on tests and assignments that involved reading was associated with higher average scores for twelfth graders who reported doing so weekly rather than monthly, no significant difference was observed at grade eight in the average scores of students engaged in this activity weekly or monthly. For fourth-grade students, weekly engagement in this type of writing about reading was associated with lower scale scores than monthly engagement. However, at all three grades, students who engaged in this activity on a monthly basis had higher average scores than the students who reported writing long answers less often.

Students' reports in 1998 about the amount of time spent watching television on a daily basis once again indicated a negative relationship to reading achievement. At all three grades, students who reported watching three or fewer hours each day had higher average scores, whereas students who reported watching six or more hours daily had the lowest average reading scores. Overall, in comparison to past assessments, there were declines at all three grades in the percentages of students who reported extensive television viewing—six or more hours — each day. It is possible that these declines in the amount of time spent watching television are due to an increase in the amount of time students spend at the computer or watching videos. If this is the case, the impact on students' reading performance remains to be demonstrated.

Perhaps of all the pages in this report, the information presented in this chapter will be most helpful to teachers and parents, to those individuals in daily and influential contact with our nation's students. It is hoped that these NAEP results will provide some illumination about school and home factors that relate to students' growth as readers, and will inspire the custodians of young minds to provide the best contexts for nourishing literacy development.

CHAPTER 5

Average Scale Score and Achievement Level Results for the States

Overview

In addition to the national component of the 1998 NAEP assessment in reading, state-by-state assessments were administered at grades 4 and 8 to participating states and jurisdictions.[1] This chapter presents average scale scores and achievement level results for public school students in both grades. The NAEP legislation requires that achievement levels be "used on a developmental basis until the Commissioner of Education Statistics determines . . . that such levels are reasonable, valid, and informative to the public." A discussion of the developmental status of achievement levels may be found in the introduction to this report (pages 10–12).

For grade 4, results of the 1998 state assessment are compared to 1994 and 1992 state-level results. As 1998 was the first year that grade 8 participated in the state-by-state assessment, no comparisons to previous assessments are possible. In addition to overall performance of students within states, this chapter presents 1998 results for selected subgroups of students, and also provides cross-state comparisons of average scale scores and the percentages of students at or above the *Proficient* level of reading achievement. Results for additional subgroups in 1998 and grade 4 results from past state assessments are provided in Appendix D.

For jurisdictions where there were a sufficient number of nonpublic schools that met participation guidelines, results are available for nonpublic school students. These results can be found in the individual reports published separately for each participating state or jurisdiction.[2] State sampling procedures and participation rates for both public and nonpublic schools can be found in Appendix A.

Scale Score Results

Table 5.1 shows 1992, 1994, and 1998 average scale scores for grade 4 public school students in jurisdictions that participated in the 1998 reading assessment.

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[1] Throughout this chapter the term *jurisdiction* is used to refer to the states, territories, and Department of Defense Education Activity schools that participated in the 1998 NAEP state-by-state assessment.

[2] NAEP state reports are forthcoming on the World Wide Web at *nces.ed.gov/NAEP*.

Overall, 44 jurisdictions participated in the 1998 state-by-state reading assessment at grade 4. Although Illinois participated, it did not meet minimum school participation guidelines for public schools, so Illinois public school results are not included in this report. Nine other jurisdictions, while meeting the minimum school participation guidelines, did not meet more stringent participation rate standards; results for these jurisdictions are included in the report but are properly noted in the relevant tables and appendices. (Standards for sample participation are described in Appendix A.) Thus, results for fourth-grade public school students are presented for 43 jurisdictions. It should be noted that the average scale scores for the nation, indicated for each assessment year in the tables throughout this chapter, are based on the national sample (not on aggregated state samples) and represent performance of public school students only.

Differences in reading performance among states and jurisdictions most likely reflect an interaction between the effectiveness of the educational programs within the state or jurisdiction and the challenges posed by economic constraints and student demographic characteristics.

Between 1994 and 1998, increases in average scale scores were observed for fourth graders in ten jurisdictions: Colorado, Connecticut, Delaware, Kentucky, Louisiana, Maryland, South Carolina, Virginia, Washington, and Department of Defense overseas schools. No decreases in average scores between 1994 and 1998 were observed for any jurisdiction. In comparison to 1992 results, increases in average scale scores in 1998 were observed for fourth graders in Colorado, Connecticut, Kentucky, Mississippi, North Carolina, and the Virgin Islands. Average scores for fourth-grade students in Utah, Wyoming, and the District of Columbia were lower in 1998 than in 1992.

The maps presented in Figures 5.1 and 5.2 further illustrate the comparison of 1998 results to the 1994 and 1992 state-by-state assessments.

Table 5.1

Average grade 4 scale scores for the states for public schools only: 1992, 1994, and 1998

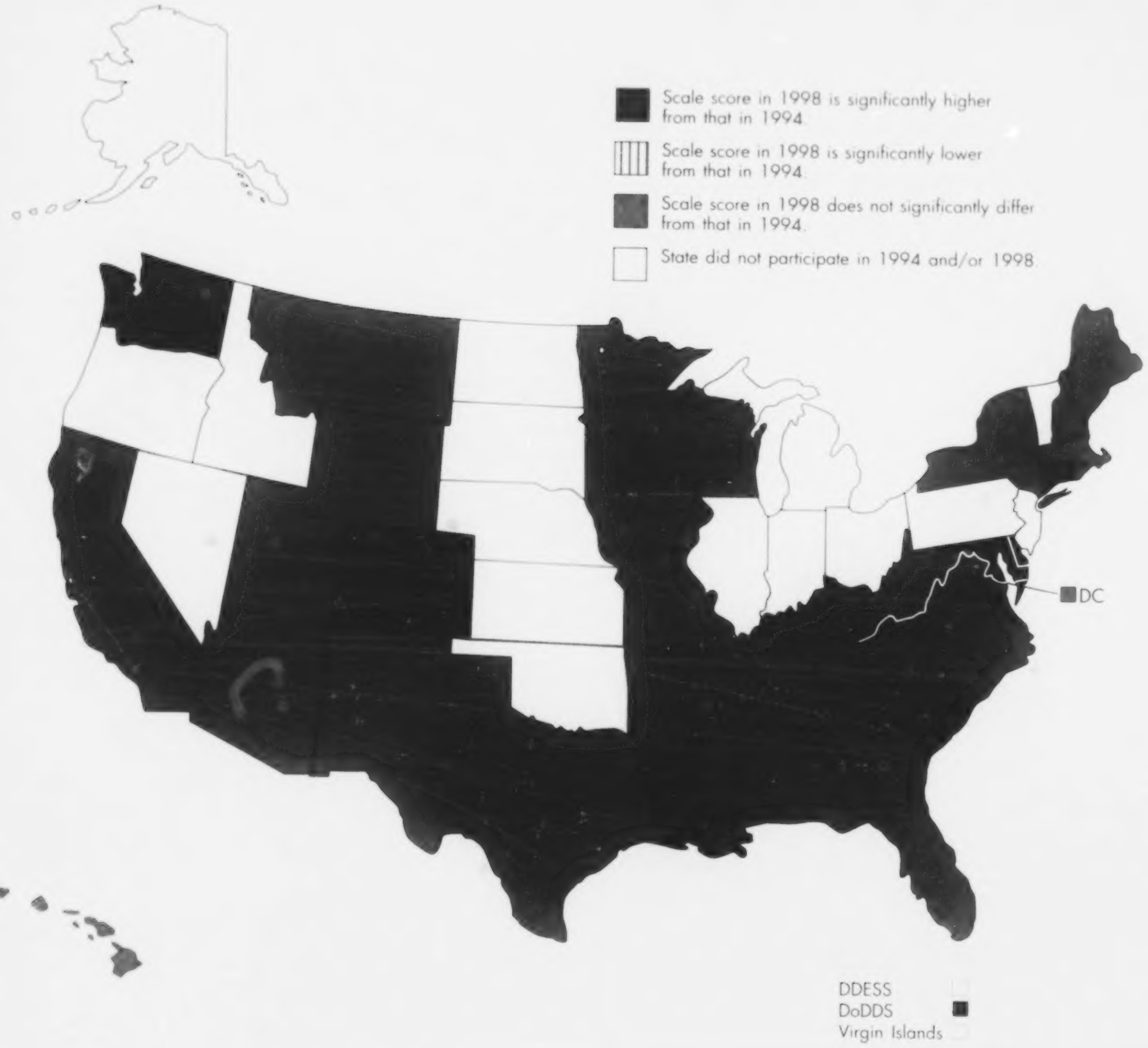
	Average scale score		
	1992	**1994**	**1998**
Nation	215	212	215+
States			
Alabama	207	208	211
Arizona	209	206	207
Arkansas	211	209	209
California[†]	202	197	202
Colorado	217	213	222**++
Connecticut	222	222	232**++
Delaware	213	206	212++
Florida	208	205	207
Georgia	212	207	210
Hawaii	203	201	200
Iowa[†]	225	223	223
Kansas[†]	—	—	222
Kentucky	213	212	218**+
Louisiana	204	197	204++
Maine	227	228	225
Maryland	211	210	215*
Massachusetts[†]	226	223	225
Michigan	216	—	217
Minnesota[†]	221	218	222
Mississippi	199	202	204*
Missouri	220	217	216
Montana[†]	—	222	226
Nevada	—	—	208
New Hampshire[†]	228	223	226
New Mexico	211	205	206
New York[†]	215	212	216
North Carolina	212	214	217**
Oklahoma	220	—	220
Oregon	—	—	214
Rhode Island	217	220	218
South Carolina	210	203	210++
Tennessee	212	213	212
Texas	213	212	217
Utah	220	217	215**
Virginia	221	213	218*
Washington	—	213	217+
West Virginia	216	213	216
Wisconsin[†]	224	224	224
Wyoming	223	221	219*
Other Jurisdictions			
District of Columbia	188	179	182**
DDESS	—	—	220
DoDDS	—	218	223++
Virgin Islands	171	—	178*

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the average scale score in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. ++ Indicates that the average scale score in 1998 was significantly different from that in 1994 using a multiple comparison procedure based on all jurisdictions that participated both years. + Indicates that the average scale score in 1998 was significantly different from that in 1994 if only one jurisdiction or the nation is being examined.

— Indicates jurisdiction did not participate. † Indicates jurisdiction did not meet one or more of the guidelines for school participation. DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 5.1

Grade 4 average scale scores for the states for public schools only: 1994 and 1998

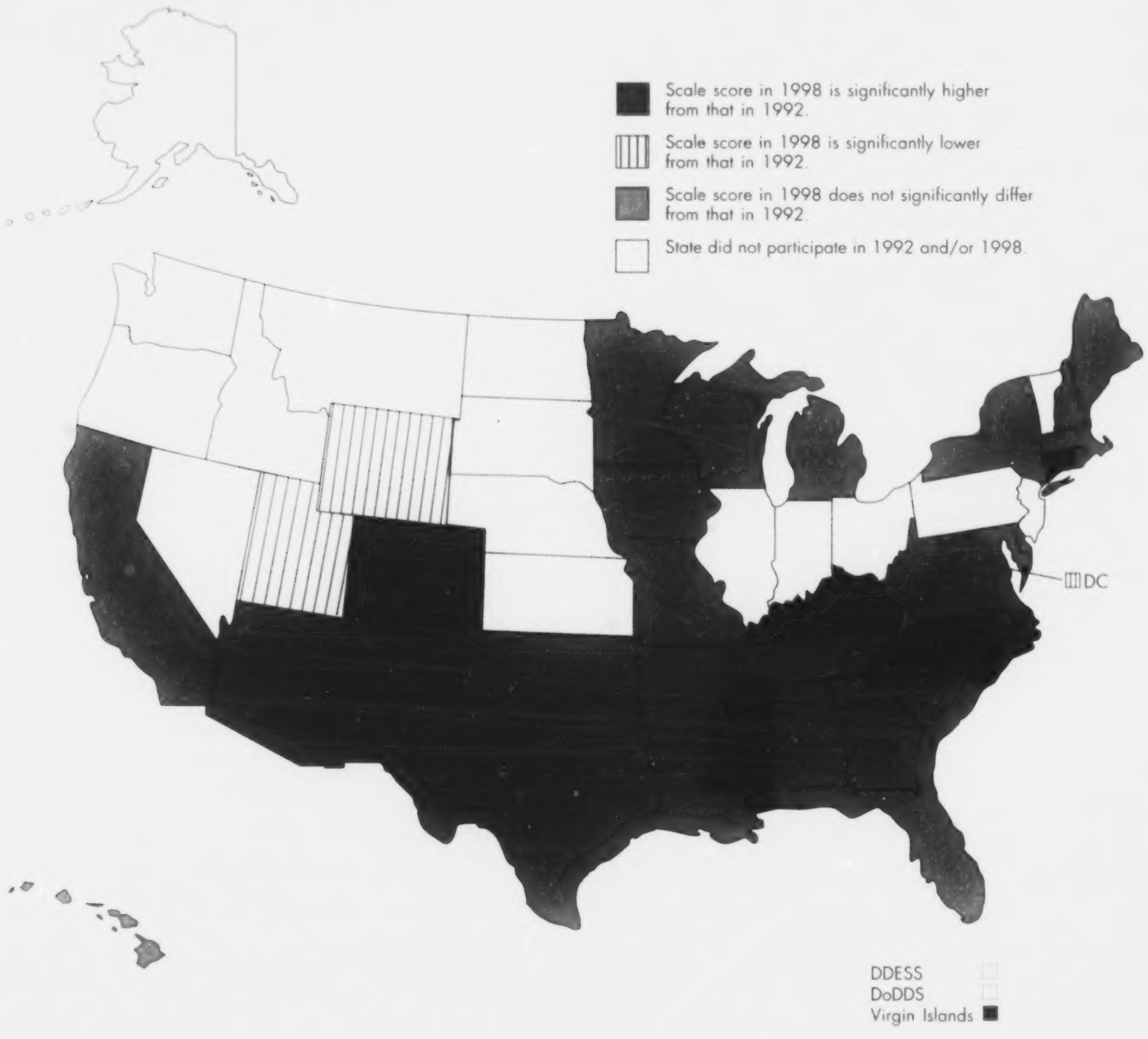

■ Scale score in 1998 is significantly higher from that in 1994.
▥ Scale score in 1998 is significantly lower from that in 1994.
▨ Scale score in 1998 does not significantly differ from that in 1994.
□ State did not participate in 1994 and/or 1998.
▨ DC
DDESS □
DoDDS ■
Virgin Islands □

NOTE: The differences between 1998 and 1994 presented in this figure include results of analyses based on a multiple comparison procedure using all jurisdictions that participated both years or the results of analyses based on a single state comparison.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

Figure 5.2

Grade 4 average scale scores for the states for public schools only: 1992 and 1998


■ Scale score in 1998 is significantly higher from that in 1992.
▥ Scale score in 1998 is significantly lower from that in 1992.
▨ Scale score in 1998 does not significantly differ from that in 1992.
☐ State did not participate in 1992 and/or 1998.
▥ DC
DDESS ☐
DoDDS ☐
Virgin Islands ■

NOTE: The differences between 1998 and 1992 presented in this figure include results of analyses based on a multiple comparison procedure using all jurisdictions that participated both years or the results of analyses based on a single state comparison.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992 and 1998 Reading Assessments.

The following figure lists the 43 states or jurisdictions that participated in the 1998 state reading assessment at grade 4 and divides them into three groups: those whose average scores were above the national average (13 states), at or around the national average (15 states), and below the national average (15 states).

Figure 5.3

1998 Grade 4 comparison of state versus national average reading scores for public schools

Above the National Average	Colorado Connecticut DDESS	DoDDS Iowa[†] Kansas[†]	Maine Massachusetts[†] Minnesota[†]	Montana[†] New Hampshire[†] Oklahoma	Wisconsin[†]
At or around the National Average	Kentucky Maryland Michigan	Missouri New York[†] North Carolina	Oregon Rhode Island Tennessee	Texas Utah Virginia	Washington West Virginia Wyoming
Below the National Average	Alabama Arizona Arkansas	California[†] Delaware District of Columbia	Florida Georgia Hawaii	Louisiana Mississippi Nevada	New Mexico South Carolina Virgin Islands

[†] Indicates jurisdiction did not meet one or more of the guidelines for school participation.

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in these tables.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 5.2 shows average scale scores for grade 8 students in jurisdictions that participated in the 1998 reading assessment. Overall, 41 jurisdictions participated in the 1998 state-by-state assessment at grade 8. As Illinois did not meet minimum school participation guidelines for public schools, this state's public school results are not included in this report. Seven other jurisdictions failed to meet more stringent participation rate standards; results for these jurisdictions are included in this report with proper notation in relevant tables and appendices. Thus, grade 8 results are presented for 40 jurisdictions. Average scores for eighth-grade public school students who participated in the state-by-state assessment ranged from 233 to 273.

Table 5.2

Average grade 8 scale scores for the states for public schools only: 1998

	Average scale score
	1998
Nation	261
States	
Alabama	255
Arizona	261
Arkansas	256
California†	253
Colorado	264
Connecticut	272
Delaware	256
Florida	253
Georgia	257
Hawaii	250
Kansas†	268
Kentucky	262
Louisiana	252
Maine	273
Maryland†	262
Massachusetts	269
Minnesota†	267
Mississippi	251
Missouri	263
Montana†	270
Nevada	257
New Mexico	258
New York†	266
North Carolina	264
Oklahoma	265
Oregon	266
Rhode Island	262
South Carolina	255
Tennessee	259
Texas	262
Utah	265
Virginia	266
Washington	265
West Virginia	262
Wisconsin†	266
Wyoming	262
Other Jurisdictions	
District of Columbia	236
DDESS	269
DoDDS	269
Virgin Islands	233

† Indicates jurisdiction did not meet one or more of the guidelines for school participation

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools

DoDDS: Department of Defense Dependents Schools (Overseas)

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

The following figure lists the 40 states or jurisdictions that participated in the 1998 state reading assessment at grade 8 and divides them into three groups: those whose average scores were above the national average (15 states), at or around the national average (11 states), and below the national average (14 states).

Figure 5.4

1998 Grade 8 comparison of state versus national average reading scores for public schools

Above the National Average	Connecticut	Kansas[1]	Minnesota[1]	Oklahoma	Virginia
	DDESS	Maine	Montana[1]	Oregon	Washington
	DoDDS	Massachusetts	New York[1]	Utah	Wisconsin[1]
At or around the National Average	Arizona	Maryland[1]	Rhode Island	West Virginia	
	Colorado	Missouri	Tennessee	Wyoming	
	Kentucky	North Carolina	Texas		
Below the National Average	Alabama	Delaware	Georgia	Mississippi	South Carolina
	Arkansas	District of Columbia	Hawaii	Nevada	Virgin Islands
	California[1]	Florida	Louisiana	New Mexico	

[1] Indicates jurisdiction did not meet one or more of the guidelines for school participation.

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in these tables.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Achievement Level Results

Achievement level results for jurisdictions are presented in terms of the percentages of students within each of the achievement level ranges — below *Basic*, *Basic*, *Proficient*, *Advanced* — and also in terms of the percentages of students at or above the *Proficient* level.

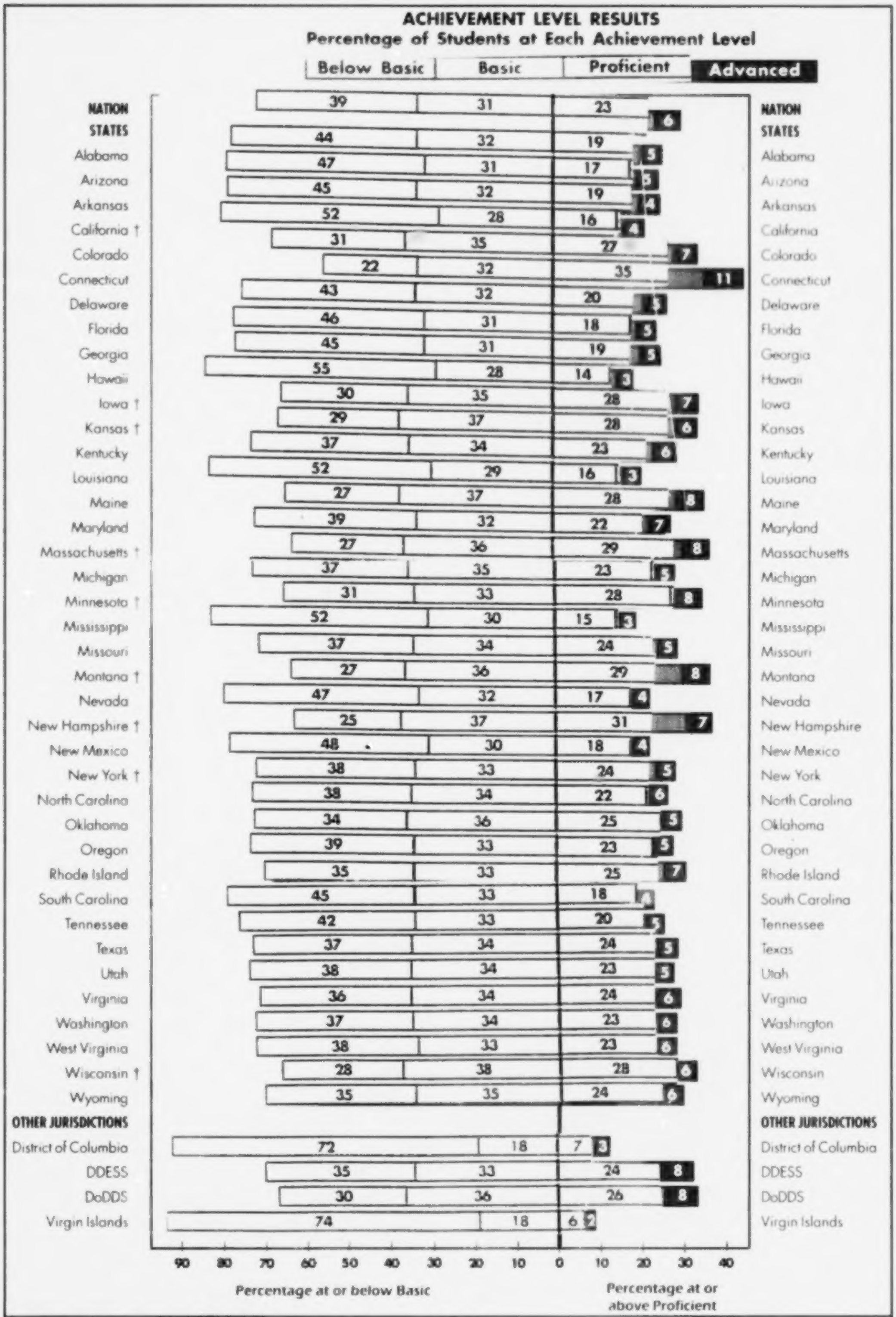
Figures 5.5 and 5.6 present the percentages of public school students within each of the achievement level ranges, for fourth and eighth graders respectively, in each state or jurisdiction in the 1998 state-by-state assessment. The shaded bars in the center column of this figure represent achievement level results. Inside the shaded bars, the numbers indicate the percentages of students who attained levels of performance. The sections to the left of the vertical line represent the proportion of students who were at *Basic* or below *Basic*. The sections of the bars to the right of the center vertical line represent the proportion of students who reached the *Proficient* and *Advanced* levels of performance.

Performance results across assessment years are given for fourth-grade students in Table 5.3. Figure 5.7 graphically displays the percentage of fourth-grade students at or above *Proficient* in 1998 as compared to 1994. Between 1994 and 1998 there was an increase in the percentage of fourth graders at or above the *Proficient* level in four jurisdictions: Colorado, Connecticut, Louisiana, and Department of Defense overseas schools. Figure 5.8 graphically displays the percentages of fourth-grade students at or above *Proficient* in 1998 as compared to 1992. In comparison to 1992 results, an increase in the percentage of fourth-grade students at or above *Proficient* in 1998 was observed in eight jurisdictions: Colorado, Connecticut, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, and the Virgin Islands. In comparison to both 1994 and 1992 results, no significant decreases in the percentage of fourth-grade students at or above the *Proficient* level of reading achievement were observed for any jurisdiction in 1998.

The percentages of eighth-grade public school students who attained the *Proficient* level or higher are presented in Table 5.4. As 1998 was the first year that a state-by-state assessment was administered at grade 8, no comparisons between performance in 1998 and past assessments are possible.

Figure 5.5

Percentage of grade 4 students within each achievement level range for public schools only: 1998

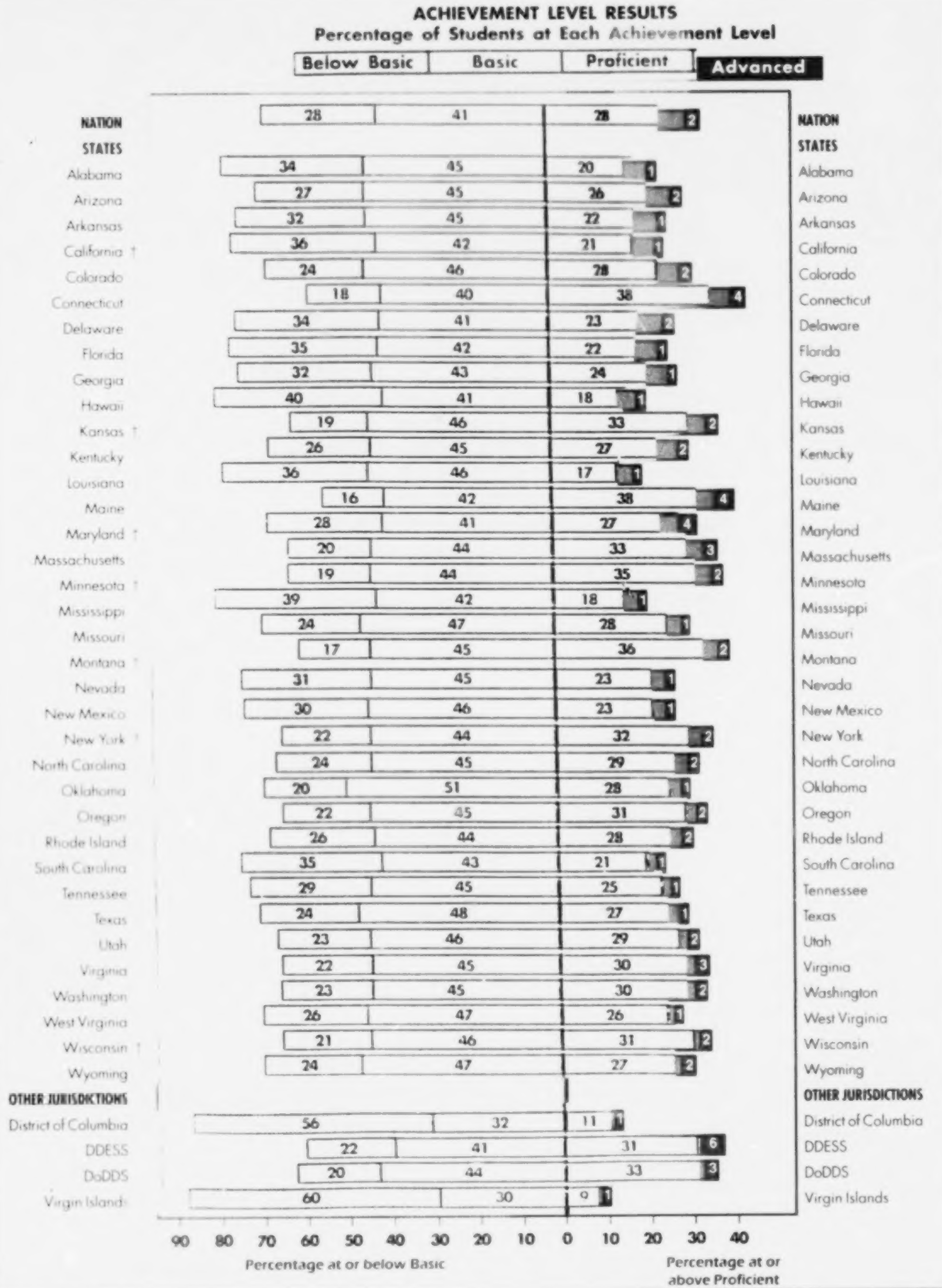


† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: Numbers may not add to 100 due to rounding. In addition, summing the percentages between two or more categories may not result in the exact cumulative percentage due to rounding. National results are based on the national sample, not on aggregated state assessment samples. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 5.6

Percentage of grade 8 students within each achievement level range for public schools only: 1998



† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: Numbers may not add to 100 due to rounding. In addition, summing the percentages between two or more categories may not result in the exact cumulative percentage due to rounding. National results are based on the national sample, not on aggregated state assessment samples. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 5.3

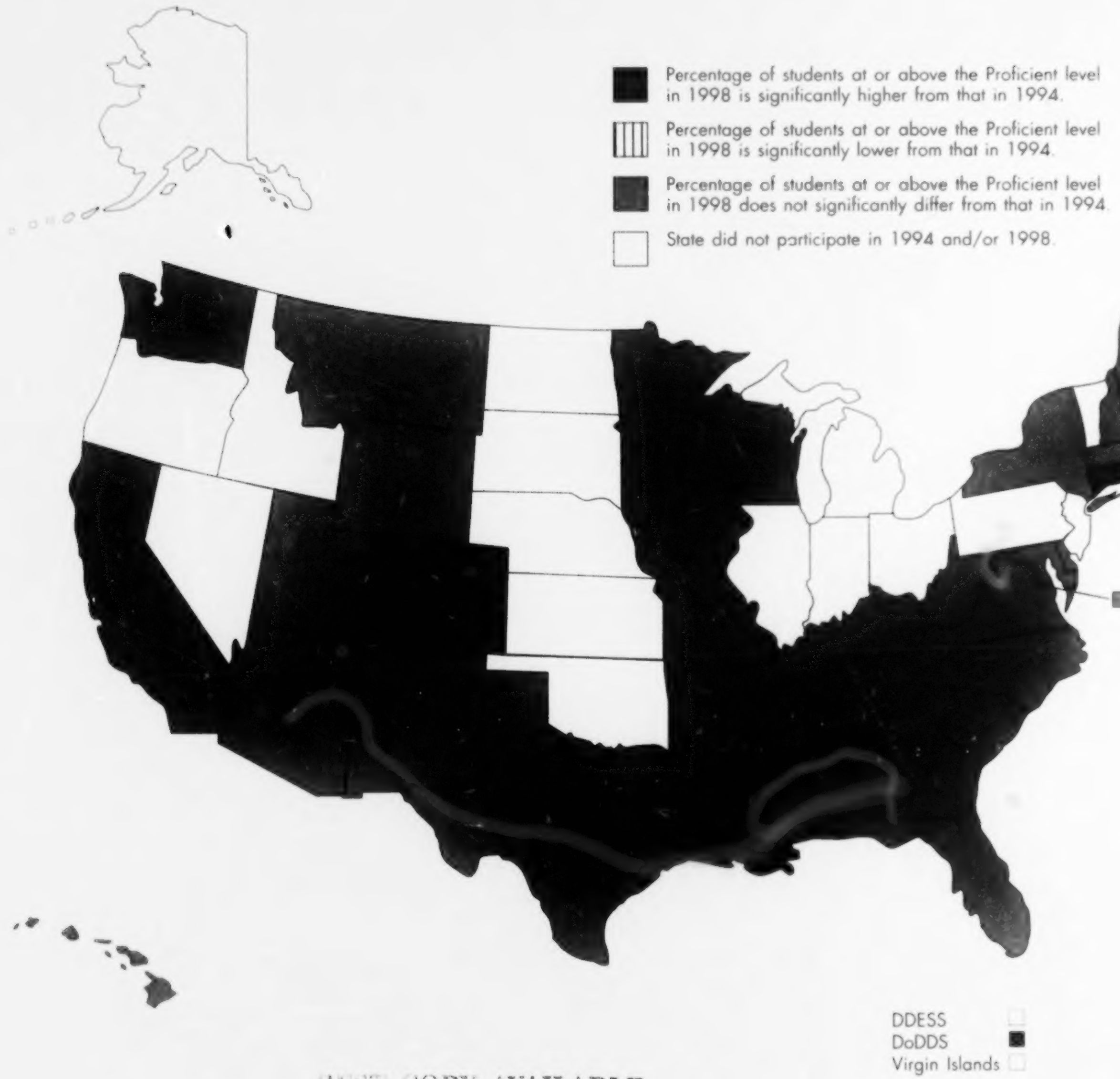
Percentage of grade 4 students at or above the Proficient level for public schools only: 1992, 1994, and 1998

	Percentage of students at or above Proficient		
	1992	1994	1998
Nation	27	28	29
States			
Alabama	20	23	24
Arizona	21	24	22
Arkansas	23	24	23
California†	19	18	20
Colorado	25	28	34**+
Connecticut	34	38	46**+
Delaware	24	23	25
Florida	21	23	23
Georgia	25	26	24
Hawaii	17	19	17
Iowa†	36	35	35
Kansas†	—	—	34
Kentucky	23	26	29*
Louisiana	15	15	19**
Maine	36	41	36
Maryland	24	26	29*
Massachusetts†	36	36	37
Michigan	26	—	28
Minnesota†	31	33	36*
Mississippi	14	18	18*
Missouri	30	31	29
Montana†	—	35	37
Nevada	—	—	21
New Hampshire†	38	36	38
New Mexico	23	21	22
New York†	27	27	29
North Carolina	25	30	28
Oklahoma	29	—	30
Oregon	—	—	28
Rhode Island	28	32	32
South Carolina	22	20	22
Tennessee	23	27	25
Texas	24	26	29
Utah	30	30	28
Virginia	31	26	30
Washington	—	27	29
West Virginia	25	26	29
Wisconsin†	33	35	34
Wyoming	33	32	30
Other Jurisdictions			
District of Columbia	10	8	10
DDESS	—	—	32
DoDDS	—	28	34+
Virgin Islands	3	—	8**

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the percentage in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the percentage in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined. — Indicates jurisdiction did not participate. † Indicates jurisdiction did not meet one or more of the guidelines for school participation. DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure 5.7

Grade 4 Proficient level results for the states for public schools only: 1994 and 1998



■ Percentage of students at or above the Proficient level in 1998 is significantly higher from that in 1994.

▥ Percentage of students at or above the Proficient level in 1998 is significantly lower from that in 1994.

▩ Percentage of students at or above the Proficient level in 1998 does not significantly differ from that in 1994.

□ State did not participate in 1994 and/or 1998.

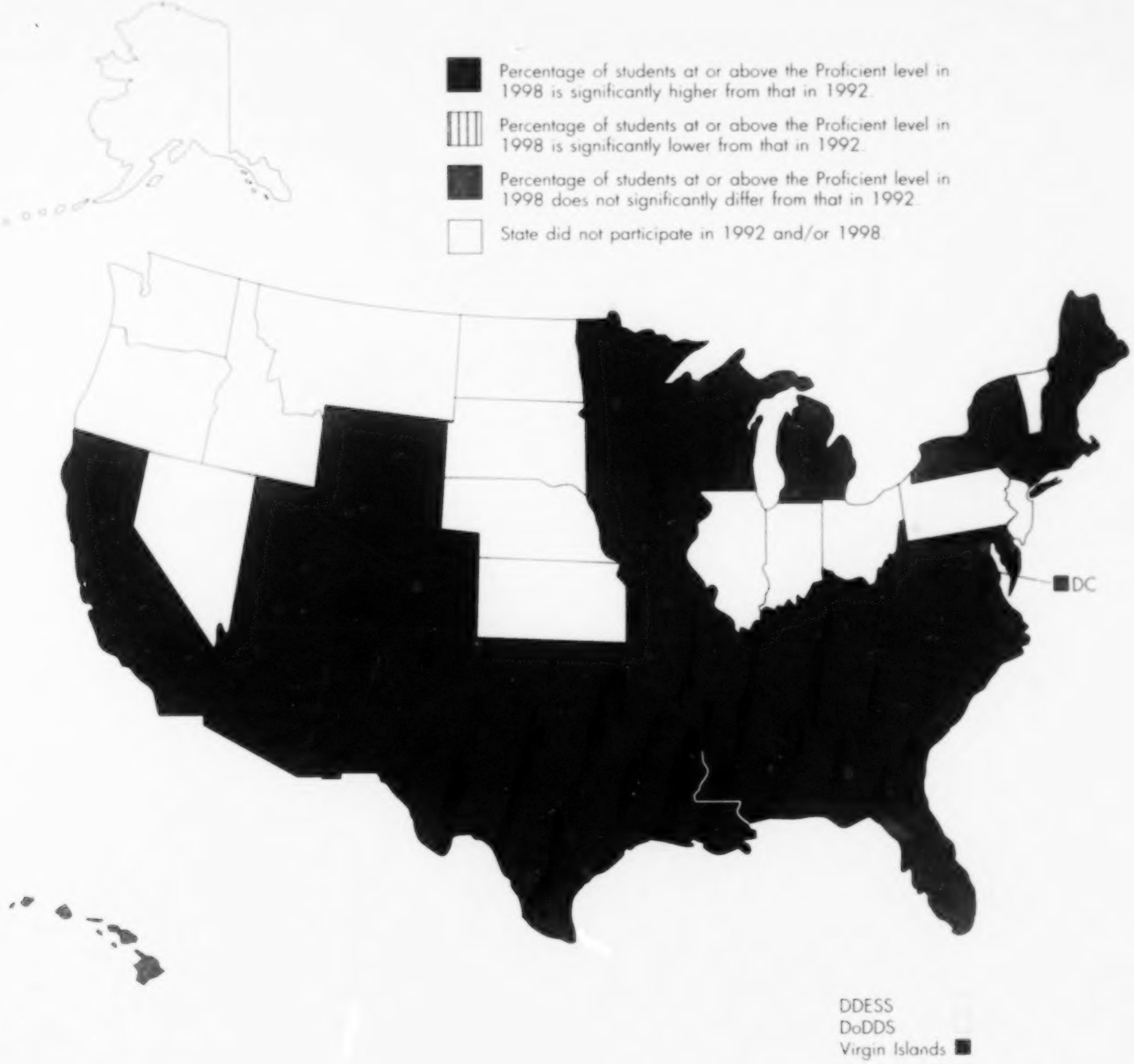
DDESS □
DoDDS ▩
Virgin Islands □

NOTE: The differences between 1998 and 1994 presented in this figure include results of analyses based on a multiple comparison procedure using all jurisdictions that participated both years or the results of analyses based on a single state comparison.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 1998 Reading Assessments.

Figure 5.8

Grade 4 Proficient level results for the states for public schools only: 1992 and 1998


■ Percentage of students at or above the Proficient level in 1998 is significantly higher from that in 1992.
▥ Percentage of students at or above the Proficient level in 1998 is significantly lower from that in 1992.
▩ Percentage of students at or above the Proficient level in 1998 does not significantly differ from that in 1992.
□ State did not participate in 1992 and/or 1998.
DC
DDESS
DoDDS
Virgin Islands

NOTE: The differences between 1998 and 1992 presented in this figure include results of analyses based on a multiple comparison procedure using all jurisdictions that participated both years or the results of analyses based on a single state comparison.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992 and 1998 Reading Assessments.

Table 5.4

Percentage of grade 8 students at or above the Proficient level for public schools only: 1998

	Percentage of students at or above Proficient
	1998
Nation	31
States	
Alabama	21
Arizona	28
Arkansas	23
California†	22
Colorado	30
Connecticut	42
Delaware	25
Florida	23
Georgia	25
Hawaii	19
Kansas†	35
Kentucky	29
Louisiana	18
Maine	42
Maryland†	31
Massachusetts	36
Minnesota†	37
Mississippi	19
Missouri	29
Montana†	38
Nevada	24
New Mexico	24
New York†	34
North Carolina	31
Oklahoma	29
Oregon	33
Rhode Island	30
South Carolina	22
Tennessee	26
Texas	28
Utah	31
Virginia	33
Washington	32
West Virginia	27
Wisconsin†	33
Wyoming	29
Other Jurisdictions	
District of Columbia	12
DDESS	37
DoDDS	36
Virgin Islands	10

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Cross-State Comparisons of Reading Performance

Figures 5.9 through 5.12 indicate whether differences between pairs of participating jurisdictions are statistically significant.[3] Figures 5.9 and 5.10 show comparisons across states on scale scores for fourth- and eighth grade students, respectively. Corresponding comparisons of achievement level results are shown in Figures 5.11 and 5.12.

Figure 5.9 presents comparisons of average scale scores for participating states and other jurisdictions at grade 4. Connecticut was the highest performing jurisdiction. The cluster of the next highest performing jurisdictions for grade 4 public schools included Department of Defense overseas schools (DoDDS), Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New Hampshire, and Wisconsin. Colorado performed equally well as eight of the next highest performing jurisdictions but had a lower average than New Hampshire.

Figure 5.10 presents comparisons of average scale scores for participating states and jurisdictions at grade 8. The cluster of highest-performing jurisdictions included Connecticut, Department of Defense domestic schools (DDESS), Maine, Massachusetts, and Montana. The Department of Defense overseas schools (DoDDS) performed equally well as four of the high performing jurisdictions but had a lower average score than Maine.

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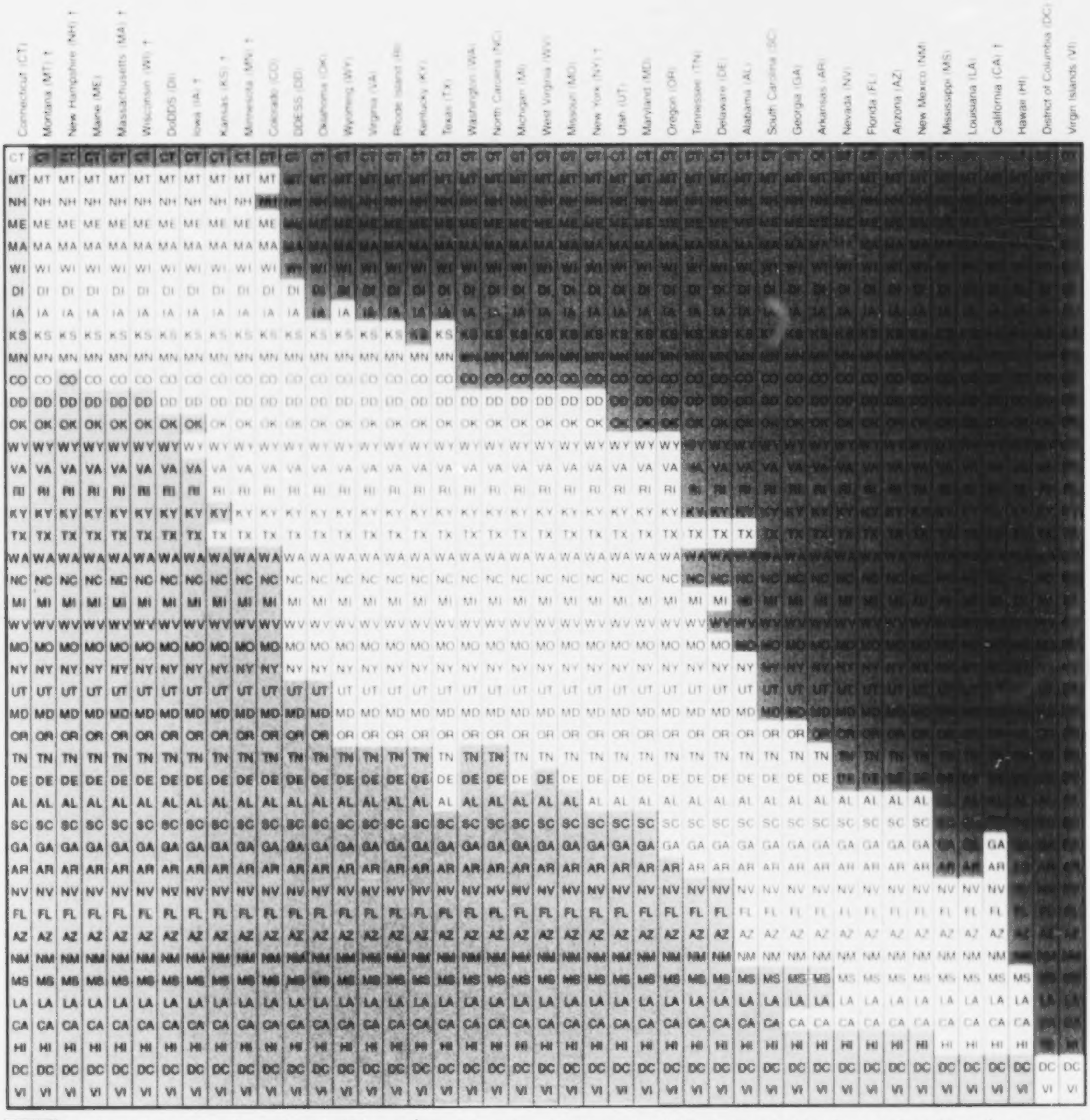
[3] The significance tests used in these figures are based on the False Discovery Rate (FDR) criterion for multiple comparisons. This procedure takes into account all possible combinations between states in declaring the differences between any two states to be statistically significant. (For further details on the FDR criterion, see Appendix A.)

Figure 5.9

Comparisons of average reading scale scores for grade 4 public schools only: 1998

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average reading scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, the column under Maine: Maine's score was lower than Connecticut, about the same as all the states listed from Montana to Colorado, and higher than the remaining states down the column.



▓ Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

☐ No statistically significant difference from the jurisdiction listed at the top of the chart.

░ Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple comparison procedure (see Appendix A). † Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see Appendix A).

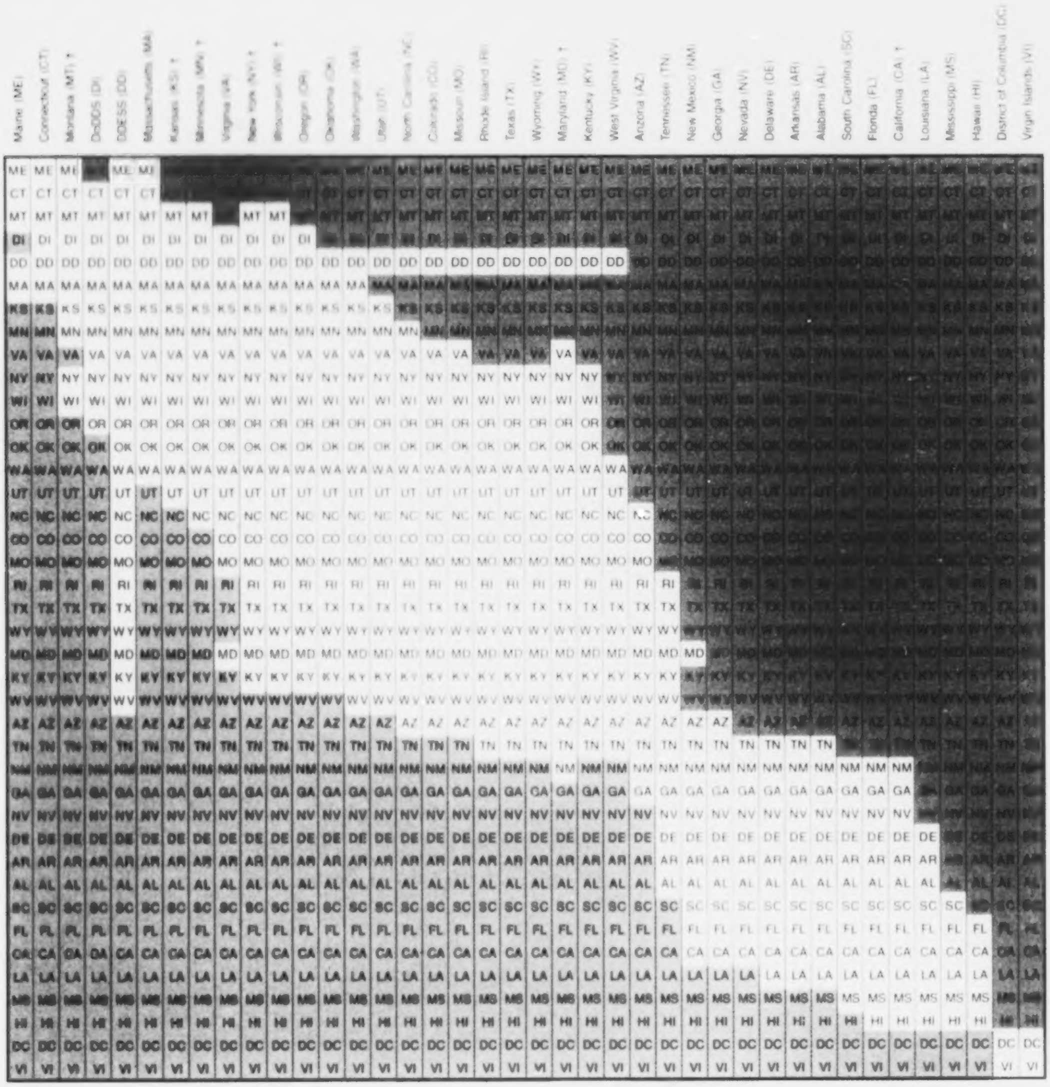
NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 5.10

Comparisons of average reading scale scores for grade 8 public schools only: 1998

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average reading scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, the column under Kansas: Kansas' score was lower than Maine and Connecticut, about the same as all the states listed from Montana through Utah, and higher than the remaining states down the column.



■ Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

□ No statistically significant difference from the jurisdiction listed at the top of the chart.

▨ Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple comparison procedure (see Appendix A).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see Appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

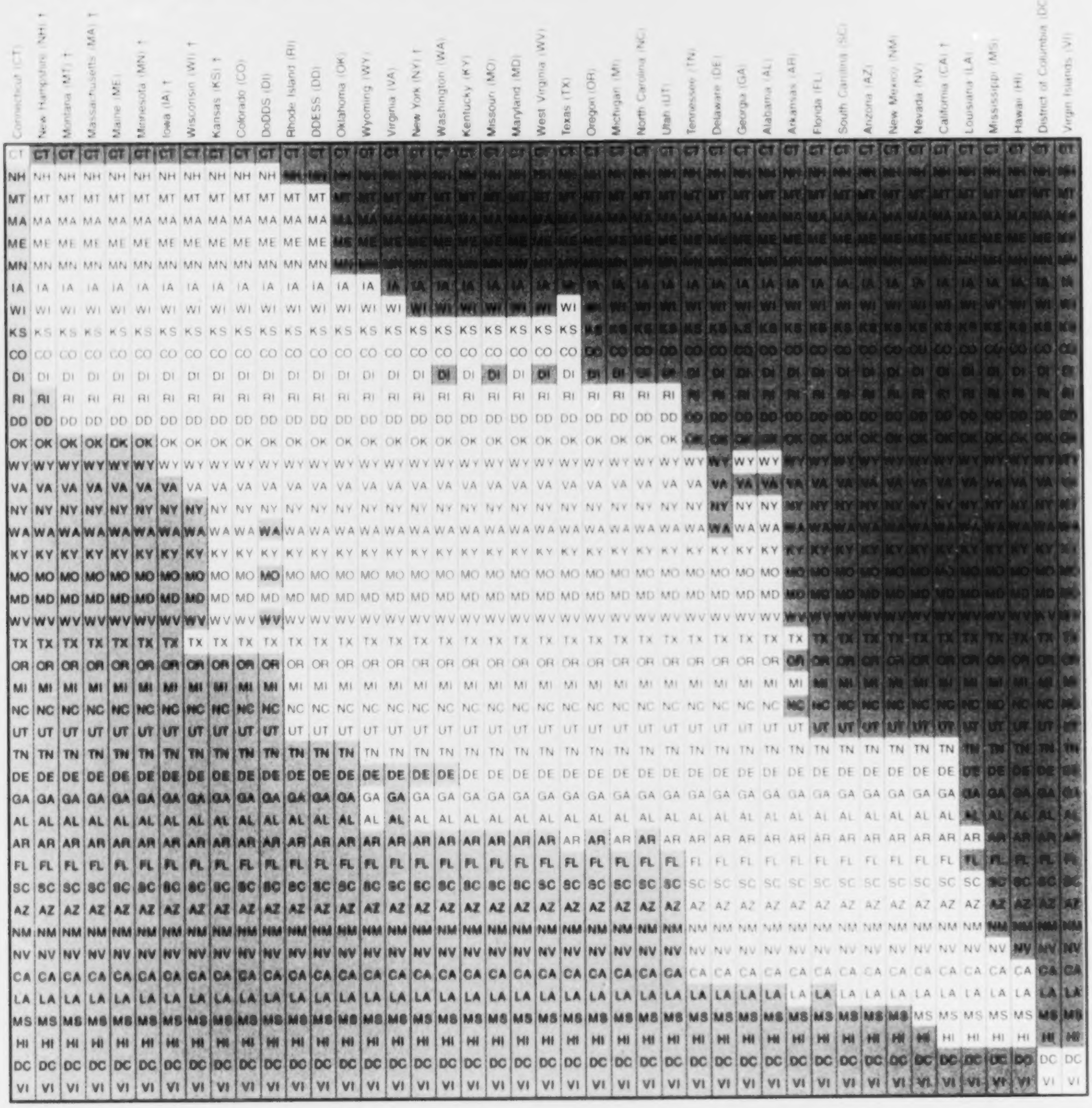
The percentages of fourth-grade students at or above the *Proficient* level of reading achievement are shown in Figure 5.11. Of all participating jurisdictions, Connecticut had the highest percentage of fourth graders at or above *Proficient*. The cluster of ten jurisdictions with the next highest percentage at or above the *Proficient* level included Colorado, Department of Defense overseas schools (DoDDS), Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New Hampshire, and Wisconsin. Reading vertically down the columns shows that there were no significant differences between the percentages of students in these top performing jurisdictions and the percentages in all the jurisdictions listed down to Rhode Island, except in the case of New Hampshire where the percentage of students at or above *Proficient* was higher than that for Department of Defense domestic schools and Rhode Island.

Figure 5.12 presents comparisons of percentages at or above the *Proficient* level for all jurisdictions that participated at grade 8. The cluster of seven top-performing jurisdictions were Connecticut, Department of Defense domestic schools, Department of Defense overseas schools, Maine, Massachusetts, Minnesota, and Montana. Reading vertically down the columns, we see that of these seven jurisdictions Maine and Connecticut also had higher percentages of eighth graders at or above the *Proficient* level than did Kansas, New York, and Oregon.

Figure 5.11

Comparisons of percentages of students at or above Proficient for grade 4 public schools only: 1998

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage at or above Proficient for this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, the column under Rhode Island: Rhode Island's percentage was lower than Connecticut and New Hampshire, about the same as the states listed from Montana through Utah, and higher than the remaining states down the column.


Connecticut (CT)
New Hampshire (NH) †
Montana (MT) †
Massachusetts (MA) †
Maine (ME)
Minnesota (MN) †
Iowa (IA) †
Wisconsin (WI) †
Kansas (KS) †
Colorado (CO)
DoDDS (DI)
Rhode Island (RI)
DDESS (DD)
Oklahoma (OK)
Wyoming (WY)
Virginia (VA)
New York (NY) †
Washington (WA)
Kentucky (KY)
Missouri (MO)
Maryland (MD)
West Virginia (WV)
Texas (TX)
Oregon (OR)
Michigan (MI)
North Carolina (NC)
Utah (UT)
Tennessee (TN)
Delaware (DE)
Georgia (GA)
Alabama (AL)
Arkansas (AR)
Florida (FL)
South Carolina (SC)
Arizona (AZ)
New Mexico (NM)
Nevada (NV)
California (CA) †
Louisiana (LA)
Mississippi (MS)
Hawaii (HI)
District of Columbia (DC)
Virgin Islands (VI)
CT
NH
MT
MA
ME
MN
IA
WI
KS
CO
DI
RI
DD
OK
WY
VA
NY
WA
KY
MO
MD
WV
TX
OR
MI
NC
UT
TN
DE
GA
AL
AR
FL
SC
AZ
NM
NV
CA
LA
MS
HI
DC
VI

▨ Jurisdiction has statistically significantly higher percentage than the jurisdiction listed at the top of the chart.

□ No statistically significant difference from the jurisdiction listed at the top of the chart.

░ Jurisdiction has statistically significantly lower percentage than the jurisdiction listed at the top of the chart.

The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple comparison procedure (see Appendix A). † Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see Appendix A).

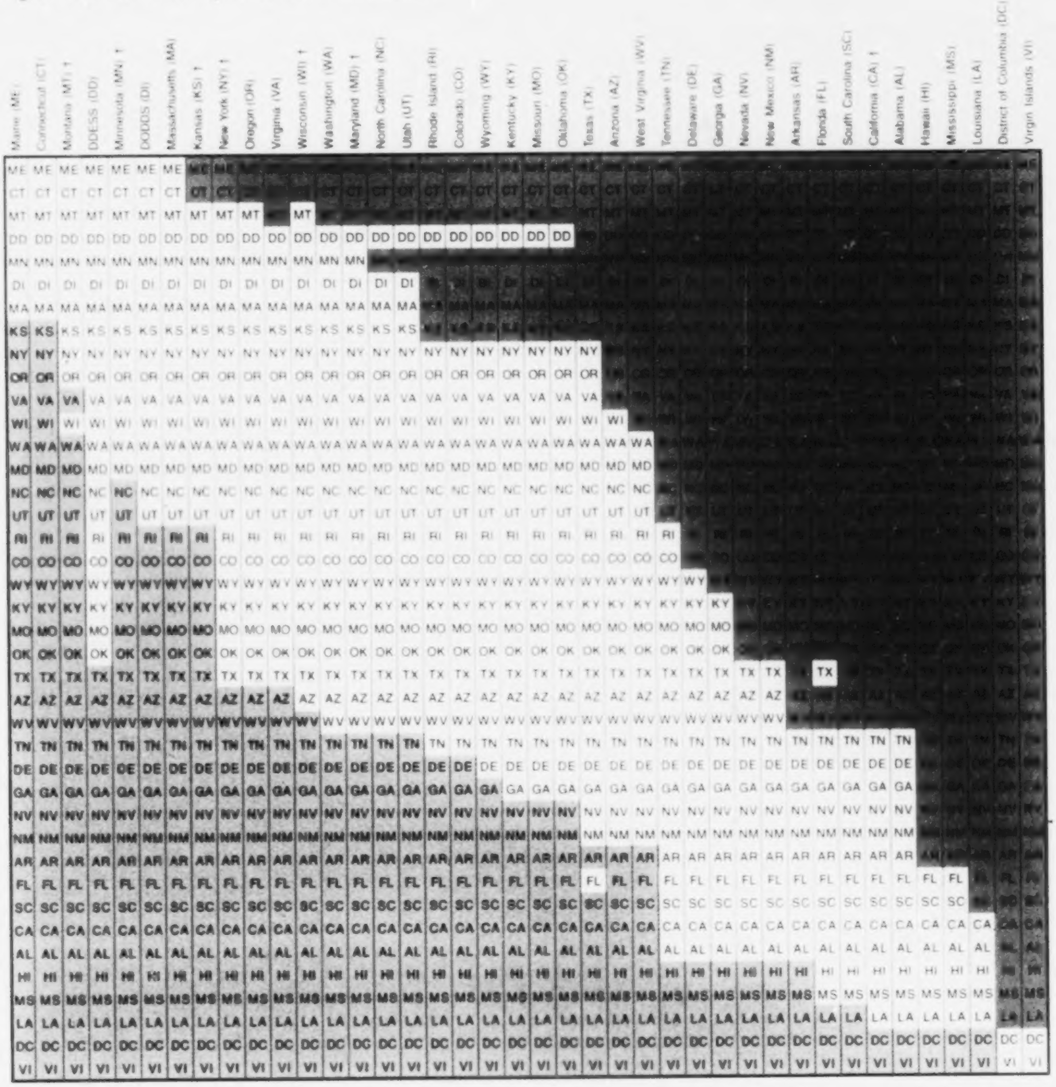
NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure 5.12

Comparisons of percentages of students at or above Proficient for grade 8 public schools only: 1998

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage at or above Proficient for this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, the column under Oregon: Oregon's percentage was lower than Maine and Connecticut, about the same as the states listed from Montana through Texas, and higher than the remaining states down the column.


Maine (ME)
Connecticut (CT)
Montana (MT) †
DDESS (DD)
Minnesota (MN) †
DoDDS (DI)
Massachusetts (MA)
Kansas (KS) †
New York (NY) †
Oregon (OR)
Virginia (VA)
Wisconsin (WI) †
Washington (WA)
Maryland (MD) †
North Carolina (NC)
Utah (UT)
Rhode Island (RI)
Colorado (CO)
Wyoming (WY)
Kentucky (KY)
Missouri (MO)
Oklahoma (OK)
Texas (TX)
Arizona (AZ)
West Virginia (WV)
Tennessee (TN)
Delaware (DE)
Georgia (GA)
Nevada (NV)
New Mexico (NM)
Arkansas (AR)
Florida (FL)
South Carolina (SC)
California (CA) †
Alabama (AL)
Hawaii (HI)
Mississippi (MS)
Louisiana (LA)
District of Columbia (DC)
Virgin Islands (VI)
ME
CT
MT
DD
MN
DI
MA
KS
NY
OR
VA
WI
WA
MD
NC
UT
RI
CO
WY
KY
MO
OK
TX
AZ
WV
TN
DE
GA
NV
NM
AR
FL
SC
CA
AL
HI
MS
LA
DC
VI

▨ Jurisdiction has statistically significantly higher percentage than the jurisdiction listed at the top of the chart.

☐ No statistically significant difference from the jurisdiction listed at the top of the chart.

░ Jurisdiction has statistically significantly lower percentage than the jurisdiction listed at the top of the chart.

The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple comparison procedure (see Appendix A).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see Appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Average Scale Score and Achievement Level Results for Selected Subgroups

The following tables present scale score and achievement level state results by gender, race/ethnicity, and eligibility in the free/reduced-price lunch program. For each subgroup, 1998 results are given separately for grades 4 and 8. The discussion here focuses on comparisons of reading performance within subgroups in 1998. For grade 4, comparisons of subgroup performance across state assessment years are presented in Appendix D. Also included in Appendix D are tables showing the percentages of students within each subgroup for participating states.

Grade 4 average scale scores and the percentage of students reaching the *Proficient* level or higher by gender are given in Table 5.5; grade 8 results appear in Table 5.6. For grade 4 students in most states, female students outscored their male counterparts. Apparent differences between males and females were not statistically significant in California, Connecticut, Kentucky, New York, Oklahoma, Rhode Island, or Wisconsin. In no state did males outscore females. Among grade 8 students, females outperformed males in all jurisdictions that participated in the assessment except for Department of Defense domestic schools and the Virgin Islands where the apparent differences were not statistically significant.

The percentages of fourth-grade female students at or above the *Proficient* level of reading achievement were higher than the percentages of males in more than half of the participating jurisdictions. No significant differences in the percentages of male and female fourth graders were observed in Alabama, Arkansas, California, Connecticut, Georgia, Kentucky, Mississippi, Nevada, New Hampshire, New York, Oklahoma, Rhode Island, South Carolina, Tennessee, Texas, West Virginia, Wisconsin, the District of Columbia, and the Virgin Islands. At grade eight, higher percentages of females than males were at or above *Proficient* in all participating jurisdictions except the Department of Defense domestic schools, the District of Columbia, New York, and the Virgin Islands where the apparent differences were not statistically significant.

Table 5.5

Average grade 4 scale scores and percentage of students at or above the Proficient level by gender for public schools only: 1998

	Male		Female	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	212	27	218	31
States				
Alabama	208	22	214	26
Arizona	201	18	212	26
Arkansas	206	22	212	24
California†	198	18	206	22
Colorado	218	30	225	37
Connecticut	229	41	234	49
Delaware	208	21	216	28
Florida	203	19	212	26
Georgia	206	22	213	27
Hawaii	194	15	205	20
Iowa†	218	29	228	40
Kansas†	219	29	226	39
Kentucky	216	27	220	31
Louisiana	199	16	209	22
Maine	222	32	229	41
Maryland	209	24	221	34
Massachusetts†	221	31	229	42
Michigan	212	23	221	33
Minnesota†	218	32	226	40
Mississippi	201	16	208	19
Missouri	211	23	222	35
Montana†	221	31	231	44
Nevada	204	18	211	24
New Hampshire†	222	35	229	41
New Mexico	202	19	209	25
New York†	214	27	218	31
North Carolina	213	24	220	31
Oklahoma	219	29	220	31
Oregon	210	24	218	32
Rhode Island	217	31	220	33
South Carolina	207	20	214	24
Tennessee	209	23	216	28
Texas	213	25	221	32
Utah	212	24	219	32
Virginia	214	26	223	33
Washington	212	25	222	33
West Virginia	213	26	219	31
Wisconsin†	222	32	226	37
Wyoming	216	26	223	34
Other Jurisdictions				
District of Columbia	177	8	186	12
DoDEA/DDESS	217	28	223	35
DoDEA/DoDDS	219	28	228	39
Virgin Islands	169	6	186	10

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 5.6

Average grade 8 scale scores and percentage of students at or above the Proficient level by gender for public schools only: 1998

	Male		Female	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	255	24	268	37
States				
Alabama	251	18	259	25
Arizona	256	22	266	33
Arkansas	250	18	262	28
California†	249	17	257	26
Colorado	257	23	270	38
Connecticut	265	34	278	50
Delaware	249	19	262	31
Florida	247	18	260	28
Georgia	252	20	262	29
Hawaii	243	14	256	23
Kansas†	263	29	273	42
Kentucky	255	22	269	37
Louisiana	245	13	258	22
Maine	265	33	280	51
Maryland†	255	25	269	38
Massachusetts	263	29	274	44
Minnesota†	260	28	275	46
Mississippi	245	14	256	23
Missouri	258	24	269	35
Montana†	263	30	277	46
Nevada	252	19	262	30
New Mexico	252	18	263	29
New York†	263	30	270	37
North Carolina	256	24	270	38
Oklahoma	259	21	271	36
Oregon	259	25	273	42
Rhode Island	257	25	268	35
South Carolina	250	17	259	26
Tennessee	252	18	265	33
Texas	257	22	267	33
Utah	260	25	269	37
Virginia	262	28	271	38
Washington	258	24	272	40
West Virginia	254	20	269	35
Wisconsin†	259	24	273	42
Wyoming	255	22	270	37
Other Jurisdictions				
District of Columbia	230	10	242	14
DoDEA/DDESS	268	36	270	38
DoDEA/DoDDS	265	31	274	43
Virgin Islands	229	8	236	11

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Average scale scores and the percentage of students at or above the *Proficient* level by racial/ethnic group are shown in Tables 5.7 and 5.8. Across all participating jurisdictions, where sample size allows comparison, White fourth graders outperformed their Black peers. For all jurisdictions, White students outperformed Hispanic students. Average scale score differences between grade 4 Black and Hispanic students were observed in six jurisdictions. In Mississippi, the District of Columbia, and the Virgin Islands, Black students outscored Hispanic students; Hispanic students in Florida, Iowa, and Wisconsin had higher average scores than Black students.

As shown in Table 5.8, similar findings were observed for students in grade 8. Across all participating jurisdictions but two, where sample size allows comparison, White eighth graders outperformed their Black peers. The differences were not statistically significant in Hawaii and Kansas. For all but one jurisdiction, White eighth graders outperformed Hispanic eighth graders. The difference was not statistically significant in the Department of Defense domestic schools. Differences between Black and Hispanic students were observed in Mississippi, Rhode Island and South Carolina, where Black students had higher average scores than Hispanic students.

Table 5.7

Average grade 4 scale scores and percentage of students at or above the Proficient level by race/ethnicity for public schools only: 1998

	White		Black		Hispanic		Asian/Pacific Isl.		American Indian	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	225	38	193	9	195	12	222	34	200	12
States										
Alabama	222	34	193	8	190	7	***	***	***	***
Arizona	220	32	190	10	186	8	***	***	202	15
Arkansas	218	29	186	7	187	10	***	***	***	***
California†	217	29	189	7	181	8	215	31	***	***
Colorado	229	41	202	17	202	15	228	40	***	***
Connecticut	240	55	205	13	205	17	244	61	***	***
Delaware	220	31	199	12	193	11	***	***	***	***
Florida	219	32	189	9	200	17	***	***	***	***
Georgia	225	38	193	9	193	12	***	***	***	***
Hawaii	211	25	195	13	183	9	201	17	183	9
Iowa†	226	37	192	7	210	22	***	***	***	***
Kansas†	228	39	198	14	207	20	***	***	214	22
Kentucky	221	32	196	11	195	11	***	***	***	***
Louisiana	222	31	186	6	184	9	***	***	***	***
Maine	227	38	***	***	208	17	***	***	***	***
Maryland	229	40	195	11	200	18	230	41	***	***
Massachusetts†	231	43	202	12	200	14	216	26	***	***
Michigan	225	34	191	8	193	11	***	***	***	***
Minnesota†	226	39	190	13	203	19	216	38	***	***
Mississippi	217	27	192	8	183	4	***	***	***	***
Missouri	223	34	190	8	196	15	***	***	***	***
Montana†	230	41	***	***	207	19	***	***	209	19
Nevada	215	27	189	6	195	12	216	27	199	12
New Hampshire†	227	40	***	***	201	11	***	***	***	***
New Mexico	222	35	183	6	199	14	***	***	181	9
New York†	227	39	193	9	194	11	234	50	***	***
North Carolina	227	37	200	11	196	13	***	***	***	***
Oklahoma	225	36	192	9	207	14	***	***	214	22
Oregon	220	33	202	10	191	11	215	25	197	9
Rhode Island	227	38	197	12	185	8	211	24	***	***
South Carolina	223	33	197	10	189	10	***	***	***	***
Tennessee	220	31	193	10	193	15	***	***	***	***
Texas	232	43	197	11	204	15	***	***	***	***
Utah	222	32	***	***	189	9	208	22	190	10
Virginia	226	38	203	13	198	13	230	38	***	***
Washington	221	33	198	13	195	12	220	31	208	19
West Virginia	219	31	192	6	196	14	***	***	***	***
Wisconsin†	230	39	193	7	208	16	***	***	***	***
Wyoming	222	33	***	***	207	18	***	***	205	16
Other Jurisdictions										
District of Columbia	231	52	180	7	168	6	***	***	***	***
DoDEA/DDESS	230	42	209	20	211	24	223	32	***	***
DoDEA/DoDDS	229	41	212	20	216	25	227	36	219	27
Virgin Islands	***	***	181	8	168	6	***	***	***	***

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 5.8

Average grade 8 scale scores and percentage of students at or above the Proficient level by race/ethnicity for public schools only: 1998

	White		Black		Hispanic		Asian/Pacific Isl.		American Indian	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	270	38	241	11	243	14	269	36	248	18
States										
Alabama	264	28	239	7	235	12	***	***	***	***
Arizona	272	38	246	11	245	13	***	***	243	11
Arkansas	263	29	235	6	230	11	***	***	***	***
California†	269	36	244	12	239	9	259	27	***	***
Colorado	272	38	241	7	244	11	264	31	***	***
Connecticut	279	50	242	10	250	16	281	53	***	***
Delaware	264	32	239	10	244	17	***	***	***	***
Florida	265	32	235	8	242	14	280	51	***	***
Georgia	269	35	239	8	237	11	***	***	***	***
Hawaii	264	33	248	20	239	11	248	17	***	***
Kansas†	272	39	253	19	248	16	***	***	***	***
Kentucky	265	31	242	9	***	***	***	***	***	***
Louisiana	264	26	237	6	230	11	***	***	***	***
Maine	274	43	***	***	***	***	***	***	***	***
Maryland†	273	42	242	11	249	19	284	56	***	***
Massachusetts	274	41	251	15	246	15	267	38	***	***
Minnesota†	272	40	233	8	234	13	248	21	***	***
Mississippi	264	29	239	8	217	7	***	***	***	***
Missouri	267	33	242	8	***	***	***	***	***	***
Montana	273	41	***	***	249	17	***	***	250	15
Nevada	265	31	240	10	242	10	261	25	***	***
New Mexico	271	39	***	***	249	14	***	***	247	10
New York†	277	46	248	12	249	13	279	46	***	***
North Carolina	271	40	249	13	239	12	***	***	261	25
Oklahoma	269	34	251	11	252	13	***	***	258	20
Oregon	269	36	***	***	247	14	274	41	254	16
Rhode Island	267	34	251	16	237	10	272	36	***	***
South Carolina	265	31	241	9	227	9	***	***	***	***
Tennessee	266	32	238	7	234	9	***	***	***	***
Texas	273	40	245	12	252	15	277	50	***	***
Utah	267	33	***	***	251	21	261	29	***	***
Virginia	274	42	249	12	253	21	271	39	***	***
Washington	269	36	249	16	245	13	264	32	244	10
West Virginia	263	28	246	13	***	***	***	***	***	***
Wisconsin†	271	37	238	7	250	20	***	***	***	***
Wyoming	266	32	***	***	241	15	***	***	244	11
Other Jurisdictions										
District of Columbia	280	54	234	9	233	11	***	***	***	***
DoDEA/DDESS	279	48	253	21	268	35	***	***	***	***
DoDEA/DoDDS	276	45	259	24	263	29	268	35	***	***
Virgin Islands	***	***	234	9	230	10	***	***	***	***

*** Sample size is insufficient to permit a reliable estimate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Average scale scores and the percentage of students at or above the *Proficient* level by eligibility for the free/reduced-price lunch program are shown in Tables 5.9 and 5.10. The results for both grades 4 and 8 consistently show that students eligible for the free/reduced-price lunch program perform below those not eligible for the program. Fourth-grade students eligible for the free/reduced-price lunch program had lower average scale scores in all participating jurisdictions, where sample size allows comparison, except the Department of Defense overseas schools where the difference was not statistically significant. At grade 8, students eligible for the program had lower average scores in all jurisdictions except for Department of Defense domestic and overseas schools.

Table 5.9

Average grade 4 scale scores and percentage of students at or above the Proficient level by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible		Not eligible	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	198	13	226	39
States				
Alabama	196	10	226	38
Arizona	188	9	222	33
Arkansas	196	13	221	32
California†	182	7	218	30
Colorado	204	17	229	40
Connecticut	205	15	240	55
Delaware	199	13	221	31
Florida	192	12	222	33
Georgia	193	10	227	39
Hawaii	185	9	212	24
Iowa†	210	22	229	40
Kansas†	207	21	229	40
Kentucky	204	15	229	41
Louisiana	193	10	224	33
Maine	216	25	230	42
Maryland	195	12	225	37
Massachusetts†	205	15	233	45
Michigan	200	14	226	36
Minnesota†	202	18	230	43
Mississippi	195	10	220	31
Missouri	202	16	225	36
Montana†	215	24	234	46
Nevada	189	9	217	27
New Hampshire†	208	20	231	44
New Mexico	194	13	224	36
New York†	197	12	232	44
North Carolina	202	14	227	37
Oklahoma	209	19	230	42
Oregon	196	13	225	37
Rhode Island	196	13	231	43
South Carolina	196	10	223	33
Tennessee	198	13	225	36
Texas	203	14	231	43
Utah	203	17	222	32
Virginia	200	13	228	38
Washington	200	13	225	37
West Virginia	205	17	228	40
Wisconsin†	206	16	231	41
Wyoming	208	20	225	35
Other Jurisdictions				
District of Columbia	174	5	216	33
DoDEA/DDESS	214	25	226	38
DoDEA/DoDDS	221	33	228	38
Virgin Islands	179	8	***	***

*** Sample size insufficient to permit a reliable estimate. † Indicates jurisdiction did not meet one or more of the guidelines for school participation. DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table 5.10

Average grade 8 scale scores and percentage of students at or above the Proficient level by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible		Not eligible	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	246	15	269	38
States				
Alabama	241	10	265	29
Arizona	245	13	270	37
Arkansas	242	12	264	29
California†	237	7	267	34
Colorado	245	12	271	37
Connecticut	249	16	277	48
Delaware	239	12	263	31
Florida	240	12	262	31
Georgia	241	10	267	33
Hawaii	239	11	255	22
Kansas†	256	22	274	42
Kentucky	251	18	270	38
Louisiana	242	10	263	27
Maine	261	26	277	47
Maryland†	242	11	269	39
Massachusetts	248	14	276	43
Minnesota†	250	21	272	41
Mississippi	240	10	263	29
Missouri	249	14	269	35
Montana†	260	25	275	44
Nevada	241	12	263	28
New Mexico	249	13	266	33
New York†	252	16	276	45
North Carolina	249	15	271	39
Oklahoma	258	20	271	35
Oregon	251	18	271	39
Rhode Island	245	13	269	37
South Carolina	240	9	265	31
Tennessee	242	10	267	33
Texas	248	13	271	37
Utah	254	21	269	35
Virginia	247	13	272	39
Washington	247	14	270	37
West Virginia	254	19	268	34
Wisconsin†	249	16	271	38
Wyoming	252	20	265	32
Other Jurisdictions				
District of Columbia	228	6	257	25
DoDEA/DDESS	261	29	273	41
DoDEA/DoDDS	257	23	267	34
Virgin Islands	233	10	***	***

*** Sample size insufficient to permit a reliable estimate. † Indicates jurisdiction did not meet one or more of the guidelines for school participation. DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table. SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Summary

This chapter presented the scale score and achievement level results for fourth- and eighth-grade public school students in the jurisdictions that participated in, and met participation guidelines for, the NAEP 1998 state-by-state assessment. In addition to the average scale score and the percentage of students at or above the *Proficient* level presented for each participating jurisdiction, comparisons across jurisdictions were provided for these results. At grade 4, student performance in 1998 was compared to the 1994 and 1992 state assessments in reading. This chapter concluded with a consideration of the performance in 1998 of three selected subgroups: gender, race/ethnicity, and eligibility for the free/reduced-price lunch program.

At grade 4, results are presented for 43 jurisdictions. Of these, Connecticut had the highest average score for public school students in 1998 as well as the highest percentage of students at or above the *Proficient* level of reading achievement. The next highest average scores were observed in a cluster of jurisdictions that consisted of Department of Defense overseas schools, Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New Hampshire, and Wisconsin. Colorado performed equally well as eight of the next highest performing jurisdictions but had a lower average than New Hampshire. These jurisdictions, with the inclusion of Colorado, also comprised the cluster of states with the next highest percentages of students at or above the *Proficient* achievement level. Across assessment years, Colorado, Connecticut, and Kentucky had higher average scores in 1998 than in both 1994 and 1992. Seven other jurisdictions — Delaware, Louisiana, Maryland, South Carolina, Virginia, Washington, and the Department of Defense overseas schools — had higher average scores in comparison to 1994 only. No decreases in average scores between 1994 and 1998 were observed for any jurisdiction. The average scores for fourth-graders in Mississippi, North Carolina, and the Virgin Islands were higher in 1998 than in 1992. In 1998, three jurisdictions had lower average scores in comparison to 1992: Utah, Wyoming, and the District of Columbia.

At grade 8, results are presented for forty jurisdictions. Of these, the five jurisdictions with the highest average scale scores for public school students were Connecticut, Department of Defense domestic schools, Maine, and Massachusetts, and Montana. The Department of Defense overseas schools (DoDDS) performed equally well as four of the high-performing jurisdictions but had a lower average score than Maine. These jurisdictions, with the inclusion of Minnesota and the Department of Defense overseas schools, also comprised the cluster of states with the highest percentages of students at or above the *Proficient* level of reading achievement.

APPENDIX A

Overview of Procedures Used for the NAEP 1998 Reading Assessment

Introduction

Conducting a large-scale assessment such as the National Assessment of Educational Progress (NAEP) entails the successful coordination of numerous projects, committees, procedures, and tasks. This appendix provides an overview of the NAEP 1998 reading assessment's primary components — framework, development, administration, scoring, and analysis. A more extensive review of the procedures and methods used in the reading assessment will be included in the forthcoming *NAEP 1998 Technical Report.*

The NAEP 1998 Reading Assessment

The reading framework underlying the NAEP 1998 assessment was developed out of a consensus among educators and researchers about the nature of reading comprehension. This framework was also used in the 1992 and 1994 reading assessments, permitting analyses of trends in reading performance.

The framework's purpose was to provide a definition of reading on which to base the NAEP assessment. Developing this framework and the specifications that guided development of the assessment involved the critical input of many people including representatives of national education organizations, teachers, parents, policymakers, business leaders, and members of the general public. This consensus process was managed by the Council of Chief State School Officers for the National Assessment Governing Board.

The framework sets forth a broad definition of "reading literacy" that entails not only being able to read but also knowing when to read, how to read, and how to reflect on what has been read. In addition, the framework views reading as an interactive process in which the reader's abilities, interests, and prior knowledge interact with the text and the context of the reading situation as meaning construction occurs.

Figure A.1

1992, 1994, and 1998 NAEP framework – aspects of reading literacy

	Constructing, Extending, and Examining Meaning			
	Initial Understanding	**Developing an Interpretation**	**Personal Reflection and Response**	**Demonstrating a Critical Stance**
	Requires the reader to provide an initial impression or unreflected understanding of what was read.	*Requires the reader to go beyond the initial impression to develop a more complete understanding of what was read.*	*Requires the reader to connect knowledge from the text with his/her own personal background knowledge. The focus here is on how the text relates to personal knowledge.*	*Requires the reader to stand apart from the text and consider it.*
Reading for Literary Experience	What is the story/ plot about? How would you describe the main character?	How did the plot develop? How did this character change from the beginning to the end of the story?	How did this character change your idea of ________? Is this story similar to or different from your own experience?	Rewrite this story with ________ as a setting or ________ as a character. How does this author's use of ________ (irony, personification, humor) contribute to ________?
Reading to Gain Information	What does this article tell you about ________? What does the author think about this topic?	What caused this event? In what ways are these ideas important to the topic or theme?	What current event does this remind you of? Does this description fit what you know about ________? Why?	How useful would this article be for ________? Explain. What could be added to improve the author's argument?
Reading to Perform a Task	What is this supposed to help you do? What time can you get a non-stop flight to X?	What will be the result of this step in the directions? What must you do before this step?	In order to ________, what information would you need to find that you don't know right now? Describe a situation where you could leave out step X.	Why is this information needed? What would happen if you omitted this?

The aspects of reading literacy described by the reading framework, including purposes for reading and reading stances, are presented in Figure A.1. This figure also provides examples of the types of questions that were used to assess the different purposes for reading via the four reading stances.

The assessment framework specified not only the particular aspects of reading literacy to be measured, but also the percentage of the assessment questions that should be devoted to each. The target percentage distributions of reading purposes and reading stances as specified in the framework, along with the actual percentage distributions in the assessment, are presented in Tables A.1 and A.2. The actual content of the assessment was highly consistent with the targeted distribution with one exception: the proportion of Personal Response questions fell below the target proportion in the framework. The Reading Instrument Development Panel overseeing the development of the assessment recognized this difference, but felt strongly that the questions developed for the assessment must be sensitive to the unique elements of each piece of authentic reading material being used. Thus, the distribution of question classifications will vary across reading passages, reading purposes, and grades.

Table A.1

Target and actual percentage distribution of questions by grade and reading purpose, 1998 NAEP reading assessment

		Reading Purpose		
		Literary Experience	Gain Information	Perform Task
Grade 4	Target Actual	55% 50%	45% 50%	** **
Grade 8	Target Actual	40% 26%	40% 44%	20% 30%
Grade 12	Target Actual	35% 23%	45% 47%	20% 30%

** Reading to Perform a Task was not assessed at Grade 4.

Table A.2

Target and actual percentage distribution of questions by grade and reading stance, 1998 NAEP reading assessment

		Reading Stance		
		Initial Understanding/ Developing an Interpretation	Personal Response	Critical Stance
Grade 4	Target Actual	33% 57%	33% 18%	33% 24%
Grade 8	Target Actual	33% 55%	33% 15%	33% 30%
Grade 12	Target Actual	33% 56%	33% 11%	33% 33%

* Actual percentages are based on the classifications agreed upon by NAEP's Instrument Development Panel. It is recognized that making discrete classifications for these categories is difficult and that independent efforts to classify NAEP questions have led to different results.

The Assessment Design

Students participating in the assessment received a booklet containing a set of general background questions, reading materials and comprehension questions, reading-specific background questions, and questions about their motivation and familiarity with the assessment tasks. The same booklets were used for the national and state assessments. Reading materials that served as stimuli and their corresponding questions were assembled into sets or "blocks." Students were given either two 25-minute blocks or one 50-minute block of reading passages and questions. At the fourth grade, only 25-minute blocks were used.

The grade 4 assessment consisted of eight 25-minute blocks: four blocks of literary materials and questions and four blocks of informative materials and questions. Each block contained at least one passage corresponding to one of the reading purposes and nine to 12 multiple-choice and constructed-response questions. In each block, one of the constructed-response questions required an extended response. As a whole, the fourth-grade assessment consisted of 36 multiple-choice questions, 38 short constructed-response questions, and eight extended constructed-response questions.

The grade 8 assessment consisted of nine 25-minute blocks (three literary, three informative, and three task) and one 50-minute block (informative). Each block contained at least one passage corresponding to one of the reading purposes and eight to 13 multiple-choice and constructed-response questions. Each block contained at least one extended constructed-response question. As a whole, the eighth-grade assessment consisted of 41 multiple-choice questions, 57 short constructed-response questions, and 12 extended constructed-response questions.

The grade 12 assessment consisted of nine 25-minute blocks (three literary, three informative, and three task) and two 50-minute blocks (informative). The blocks contained at least one passage and eight to 16 multiple-choice and constructed-response questions. Each block contained at least one extended constructed-response question. As a whole, the twelfth-grade assessment contained 43 multiple-choice questions, 63 short constructed-response questions, and 13 extended constructed-response questions. Grade 12 was not assessed in state NAEP.

The assessment design allowed for maximum coverage of reading abilities at each grade, while minimizing the time burden for any one student. This was accomplished through the use of matrix sampling of items, in which representative samples of students take various portions of the entire pool of assessment questions. Individual students are required to take only a small portion, but the aggregate results across the entire assessment allow for broad reporting of reading abilities for the targeted population.

In addition to matrix sampling, the assessment design utilized a procedure for distributing booklets that controlled for position and context effects. Students received different blocks of passages and comprehension questions in their booklets according to a procedure called "partially balanced incomplete block (pBIB) spiraling." This procedure assigned blocks of questions in a manner that balanced the positioning of blocks across booklets and balanced the pairing of blocks within booklets according to reading purposes. Blocks were balanced within each reading purpose and were partially balanced across reading purposes. The spiraling aspect of this procedure cycles the booklets for administration, so that typically only a few students in any assessment session receive the same booklet.

In addition to the student assessment booklets, three other instruments provided data relating to the assessment — a teacher questionnaire, a school questionnaire, and a Students with Disabilities/Limited English Proficiency (SD/LEP) questionnaire. The SD/LEP student questionnaire was completed by a school staff member knowledgeable about those students who were selected to participate in the assessment and who were identified as (1) having an Individualized Education Plan (IEP) or equivalent plan (for reasons other than being gifted or talented) or (2) being limited English proficient (LEP). An SD/LEP student questionnaire was completed for each identified student regardless of whether the student participated in the assessment. Each SD/LEP questionnaire took approximately 3 minutes to complete and asked about the student and the special programs in which he or she participated.

National and State Samples

The national and regional results presented in this report are based on nationally representative probability samples of fourth-, eighth-, and twelfth-grade students. The samples were selected using a complex multistage design that involved sampling students from selected schools within selected geographic areas across the country. The sample design had the following stages:

1. selection of geographic areas (a county, group of counties, or metropolitan statistical area);
2. selection of schools (public and nonpublic) within the selected areas; and
3. selection of students within selected schools.

Each selected school that participated in the assessment and each student assessed represents a portion of the population of interest. Sampling weights are needed to make valid inferences between the student samples and the respective populations from which they were drawn. Sampling weights account for disproportionate representation due to the oversampling of students who attend schools with high concentrations of Black and/or Hispanic students and who attend nonpublic schools. Among other uses, sampling weights also account for lower sampling rates for very small schools.

Table A.3 provides a summary of the national school and student participation rates for the reading assessment. Participation rates are presented for public and nonpublic schools, individually and combined.

Table A.3

NAEP 1998 school and student participation rates for the nation: Grades 4, 8, and 12 public schools, nonpublic schools, and combined

	Weighted School Participation		Total Number of Schools Participating	Weighted Percentage Student Participation Rate	Total Number of Students Assessed
	Percentage Before Substitutes	Percentage After Substitutes			
Grade 4					
Public	81	89	348	96	6300
Nonpublic	80	91	86	97	1372
Combined	81	89	434	96	7672
Grade 8					
Public	76	83	367	92	9091
Nonpublic	79	84	116	95	1960
Combined	76	83	483	93	11051
Grade 12					
Public	70	79	398	79	10664
Nonpublic	66	72	89	90	2011
Combined	70	78	487	80	12675

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

The results of the 1998 state assessment program in reading provided in this report are based on state-level samples of fourth- and eighth-grade students. The samples of both public and nonpublic school fourth- and eighth-grade students were selected based on a two-stage sample design that entailed selecting schools within participating jurisdictions and selecting students within schools. The first-stage samples of schools were selected with probability proportional to the fourth- or eighth-grade enrollment in those schools. Special procedures were used for jurisdictions that have many small schools and for jurisdictions that have a small number of schools.

As with the national samples, the jurisdiction samples were weighted to allow for valid inferences about the populations of interest. Tables A.4a through A.4d contain the unweighted number of participating schools and students as well as weighted school and student participation rates. Two weighted school participation rates are provided for each jurisdiction. The first rate is the weighted percentage of schools participating in the assessment before substitution. This rate is based only on the number of schools that were initially selected for the assessment. The numerator of this rate is the sum of the number of students represented by each initially selected school that participated in the assessment. The denominator is the sum of the number of students represented by each of the initially selected schools that had eligible students enrolled. This rate included both participating and nonparticipating schools.

The second school participation rate is the weighted participation rate after substitution. The numerator of this rate is the sum of the number of students represented by each of the participating schools, whether originally selected or substituted. The denominator is the same as that for the weighted participation rate for the initial sample. This statement means that for a given jurisdiction, the weighted participation rate after substitution is at least as great as the weighted participation rate before substitution.

Also presented in Table A.4a through A.4d are the weighted percentages of students who participated after make-up sessions were completed. This rate reflects the percentage of the eligible student population from participating schools within the jurisdiction, and this percentage represents the students who participated in the assessment in either an initial session or a make-up session. The numerator of this rate is the sum, across all assessed students, of the number of students that each selected student who was eligible to participate represents, including students who did not participate.

Table A.4a

NAEP 1998 school and student participation rates for the nation and the states: Grade 4 public schools

	Weighted School Participation		Total Number of Schools Participating	Weighted Percentage Student Participation Rate	Total Number of Students Assessed
	Percentage Before Substitutes	Percentage After Substitutes			
Nation	81	89	348	96	6300
States					
Alabama	71	91	98	96	2506
Arizona	97	98	108	94	2432
Arkansas	93	97	102	95	2580
California [2]	74	80	84	93	1722
Colorado	95	95	104	94	2528
Connecticut	97	98	107	94	2484
Delaware	100	100	65	94	2309
Florida	99	99	103	94	2463
Georgia	96	99	104	96	2647
Hawaii	100	100	105	95	2600
Illinois [1]	65	84	89	95	2161
Iowa [2]	73	84	92	96	2232
Kansas [2]	70	70	79	93	1845
Kentucky	90	92	99	96	2442
Louisiana	93	100	109	95	2587
Maine	95	96	106	93	2355
Maryland	88	88	92	95	2241
Massachusetts [3]	88	88	95	95	2306
Michigan	75	90	95	93	2365
Minnesota [3]	86	86	92	94	2271
Mississippi	94	94	96	95	2552
Missouri	97	99	105	95	2482
Montana [2]	72	78	83	95	1847
Nevada	100	100	113	94	2597
New Hampshire [2]	70	70	74	93	1805
New Mexico	99	99	109	94	2284
New York [2]	74	84	89	95	2221
North Carolina	99	99	103	94	2514
Oklahoma	100	100	109	95	2576
Oregon	90	94	102	95	2396
Rhode Island	100	100	106	94	2533
South Carolina	97	97	98	95	2411
Tennessee	94	97	103	94	2627
Texas	96	97	102	95	2241
Utah	100	100	106	95	2678
Virginia	100	100	106	95	2602
Washington	89	89	93	94	2378
West Virginia	100	100	110	94	2518
Wisconsin [2]	80	82	88	95	2071
Wyoming	100	100	117	95	2642
Other Jurisdictions					
District of Columbia	100	100	104	93	2353
DDESS	100	100	39	96	2647
DoDDS	100	100	103	94	2609
Virgin Islands	100	100	24	96	1469

[1] The jurisdiction's public school weighted participation rate for the initial sample was less than 70%.

[2] The jurisdiction's public school weighted participation rate for the initial sample of schools was below 85% AND the weighted school participation rate after substitution was below 90%.

[3] The nonparticipating public schools included a class of schools with similar characteristics, which together accounted for more than 5% of the jurisdiction's total fourth-grade weighted sample of public schools.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas). SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table A.4b

NAEP 1998 school and student participation rates for the nation and the states: Grade 4 nonpublic schools

	Weighted School Participation		Total Number of Schools Participating	Weighted Percentage Student Participation Rate	Total Number of Students Assessed
	Percentage Before Substitutes	Percentage After Substitutes			
Nation	80	91	86	97	1372
States					
Arkansas [1]	55	76	7	97	163
Colorado [2]	70	86	11	95	221
Connecticut [2]	82	82	12	95	261
Florida [2]	78	78	12	94	271
Georgia [2]	80	80	9	97	266
Hawaii [2]	80	85	18	97	379
Illinois [2]	70	70	14	96	353
Iowa	92	92	16	98	329
Louisiana [2]	81	81	17	95	413
Maine [1]	68	80	10	94	127
Maryland [1]	66	66	14	98	297
Massachusetts [2]	84	84	13	94	282
Michigan [2]	73	73	13	95	264
Minnesota [2]	80	81	17	95	335
Mississippi [1]	68	74	10	98	224
Missouri [2]	73	80	17	96	317
Montana [3]	88	88	5	94	99
Nebraska	93	99	22	96	476
Nevada [2]	78	89	9	95	150
New Mexico	71	91	16	95	221
New York [1]	67	67	17	96	377
North Carolina	74	90	10	95	227
Rhode Island	86	96	18	95	379
South Carolina	85	96	11	94	227
Utah [2]	75	75	8	94	107
Washington [2]	77	77	10	95	175
West Virginia [2]	77	86	7	100	124
Wisconsin [1]	68	75	24	96	424
Wyoming	74	96	7	91	95
Other Jurisdictions					
Virgin Islands	96	96	24	96	426

[1] The jurisdiction's nonpublic school weighted participation rate for the initial sample was less than 70%.

[2] The jurisdiction's nonpublic school weighted participation rate for the initial sample of schools was below 85% AND the weighted school participation rate after substitution was below 90%.

[3] The jurisdiction's total number of participating schools did not meet the minimum sample size requirement of six.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1998 Reading Assessment.

Table A.4c

NAEP 1998 school and student participation rates for the nation and the states: Grade 8 public schools

	Weighted School Participation		Total Number of Schools Participating	Weighted Percentage Student Participation Rate	Total Number of Students Assessed
	Percentage Before Substitutes	Percentage After Substitutes			
Nation	76	83	367	92	9091
States					
Alabama	78	91	102	93	2428
Arizona	97	97	105	91	2325
Arkansas	93	97	105	92	2412
California [2]	72	84	90	91	1944
Colorado	97	97	106	91	2542
Connecticut	99	99	104	91	2489
Delaware	100	100	31	91	1987
Florida	100	100	103	89	2392
Georgia	97	100	104	90	2499
Hawaii	100	100	51	91	2461
Illinois [1]	66	81	89	93	2051
Kansas [2]	71	71	81	92	1857
Kentucky	87	87	91	93	2282
Louisiana	92	100	110	91	2479
Maine	97	97	97	92	2363
Maryland [2]	84	85	88	89	2087
Massachusetts	89	89	91	91	2141
Minnesota [2]	74	74	81	93	1926
Mississippi	92	92	92	92	2274
Missouri	92	97	109	92	2526
Montana [2]	76	78	59	92	1877
Nevada	99	99	55	91	2449
New Mexico	96	96	88	90	2183
New York [2]	71	77	81	88	1842
North Carolina	100	100	104	92	2487
Oklahoma	100	100	103	91	2182
Oregon	85	88	96	89	2169
Rhode Island	100	100	50	88	2393
South Carolina	95	95	99	93	2429
Tennessee	87	89	95	90	2159
Texas	96	96	100	93	2318
Utah	100	100	94	90	2510
Virginia	100	100	103	91	2493
Washington	86	86	93	91	2205
West Virginia	100	100	106	91	2442
Wisconsin [2]	71	73	81	92	1918
Wyoming	95	95	67	91	2509
Other Jurisdictions					
District of Columbia	100	100	30	86	1528
DDESS	100	100	11	95	610
DoDDS	100	100	57	94	2138
Virgin Islands	100	100	6	88	643

[1] The jurisdiction's weighted public school participation rate for the initial sample was less than 70%.

[2] The jurisdiction's public school weighted participation rate for the initial sample of schools was below 85% AND the weighted school participation rate after substitution was below 90%.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table A.4d

NAEP 1998 school and student participation rates for the nation and the states: Grade 8 nonpublic schools

	Weighted School Participation		Total Number of Schools Participating	Weighted Percentage Student Participation Rate	Total Number of Students Assessed
	Percentage Before Substitutes	Percentage After Substitutes			
Nation	79	84	116	95	1960
States					
Arizona [1]	68	78	9	90	174
Arkansas	86	86	8	97	132
California [2]	79	79	13	97	295
Colorado	88	100	10	97	154
Connecticut [2]	84	84	19	95	343
Florida [2]	74	74	11	93	189
Georgia	100	100	11	95	185
Illinois [1]	61	61	14	98	288
Louisiana [2]	78	78	22	95	453
Maine [2]	70	78	8	96	78
Maryland [2]	82	82	14	96	326
Massachusetts [1]	65	65	10	96	183
Missouri	90	90	16	96	288
Montana [2]	82	82	9	98	147
Nebraska	89	89	20	95	362
Nevada [2]	79	88	8	96	129
New Mexico [2]	79	83	13	95	166
New York [2]	73	73	18	95	345
North Carolina [2]	81	84	9	96	238
Rhode Island	85	85	21	94	401
Washington	77	100	11	94	229
West Virginia	87	87	7	93	96
Wyoming [3]	95	95	6	99	51
Other Jurisdictions					
Virgin Islands	100	100	14	96	228

[1] The jurisdiction's nonpublic school weighted participation rate for the initial sample was less than 70%.

[2] The jurisdiction's nonpublic school weighted participation rate for the initial sample of schools was below 85% AND the weighted school participation rate after substitution was below 90%.

[3] The jurisdiction's total number of assessed students did not meet the minimum requirement of at least 62.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Standards for Sample Participation

In carrying out the 1998 state assessment program, the National Center for Education Statistics (NCES) established participation rate standards that jurisdictions were required to meet in order for their results to be reported (see notations in Tables A.4a through A.4d). NCES also established additional standards that required the notation of published results for jurisdictions whose sample participation rates were low enough to raise concerns about their representativeness.

At both grades 4 and 8, one jurisdiction, Illinois, failed to meet the initial public school participation rate of 70 percent. For this state, results for fourth- and eighth-grade public school students are not reported in this report or any report of NAEP 1998 reading state assessment findings. Several other jurisdictions whose results were published received a notation to indicate possible nonresponse bias.

The following six jurisdictions failed to meet the initial nonpublic school participation rate of 70 percent at grade 4: Arkansas, Maine, Maryland, Mississippi, New York, and Wisconsin. Montana failed to meet reporting standards because its total number of schools was below the minimum sample size of six. Three jurisdictions failed to meet the initial nonpublic school participation rate of 70 percent at grade 8: Arizona, Illinois, and Massachusetts. Wyoming failed to meet reporting standards because its student sample was below 62 students. For these jurisdictions, results for fourth- or eighth-grade nonpublic school students are not reported in this or any report of NAEP 1998 reading state assessment findings. As with public schools, several other jurisdictions whose nonpublic school results were published received a notation to indicate nonresponse bias.

To help ensure adequate sample representation for each jurisdiction participating in the 1998 state assessment program, NAEP provided substitutes for nonparticipating public and nonpublic schools. (When possible, a substitute school was provided for each initially selected school that declined participation.) For jurisdictions that used substitute schools, the assessment results were based on the student data from all schools participating from both the original sample and the substitute schools (unless an initial school and its substitute eventually participated, in which case only the data from the initial school were used). For jurisdictions that did not use substitute schools, the participation rates were based on participating schools from the original sample.

NCES standards require weighted school participation rates before substitution of at least 85 percent to guard against potential bias due to school nonresponse. The NCES standards do not explicitly address the use of substitute schools to replace initially selected schools that declined to participate in the assessment. However, considerable technical consideration has been given to this issue. Even though the characteristics of the substitute schools were matched as closely as possible to the characteristics of the initially selected schools, substitution does not entirely eliminate the possibility of bias because of the nonparticipation of initially selected schools. Thus, for the weighted school participation rates that included substitute schools, the guideline was set at 90 percent. This is expressed in the following guideline:

> *A jurisdiction will receive a notation if its weighted participation rate for the initial sample of schools was below 85 percent AND the weighted school participation rate after substitution was below 90 percent.*

Seven states did not meet this guideline for public schools at grade 4: California, Iowa, Kansas, Montana, New Hampshire, New York, and Wisconsin. Fifteen jurisdictions did not meet this guideline for nonpublic schools at grade 4: Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, Nevada, Utah, Washington, and West Virginia. Seven jurisdictions did not meet this guideline for public schools at grade 8: California, Kansas, Maryland, Minnesota, Montana, New York, and Wisconsin. Eleven jurisdictions did not meet this guideline for nonpublic schools at grade 8: California, Connecticut, Florida, Louisiana, Maine, Maryland, Montana, Nevada, New Mexico, New York, and North Carolina.

The NCES standards further specify that attention should be given to the representativeness of the sample coverage. Thus, inadequate representation of an important segment of a jurisdiction's population is of concern, regardless of the overall participation rate. This is expressed in the following guideline:

> *A jurisdiction that is not already receiving a notation for problematic overall school or student participation rates will receive a notation if the sampled students within participating schools included a class of students with similar characteristics that had a weighted student response rate of below 80 percent, and from which the nonresponding students together accounted for more than five percent of the jurisdiction's weighted assessable student sample. Student groups from which a jurisdiction needed minimum levels of participation were determined by the age of the students, whether or not the student was classified as a student with a disability (SD) or of limited English proficiency (LEP), and the type of assessment session (monitored or unmonitored). In addition, for public schools, classes of schools were determined by school level of urbanization, minority enrollment, and median household income of the area in which the school is located. For nonpublic schools, classes of schools were determined by type and location of schools.*

In the 1998 reading assessments, only two states did not meet this guideline: Massachusetts and Minnesota, in grade 4 public schools only.

The NCES Guideline used to report results in the state assessments, and the guidelines for notation when there is some risk of nonresponse bias in the reported results, are presented in the tables of the following section.

Guidelines for Notations 1, 2, and 3:

The publication of NAEP results

The conditions that will result in the publication of a
jurisdiction's results are presented below.

Guideline 1 – Publication of Public School Results:
A jurisdiction will have its public school results published in the 1998 NAEP Reading Report Card (or in other reports that include all state level results) if and only if its weighted participation rate for the initial sample of public schools is greater than or equal to 70 percent. Similarly, a jurisdiction will receive a separate NAEP State Report if and only if its weighted participation rate for the initial sample of public schools is greater than or equal to 70 percent.

Guideline 2 – Publication of Nonpublic School Results:
A jurisdiction will have its nonpublic school results published in the 1998 NAEP Reading Report Card (or in other reports that include all state-level results) if and only if its weighted participation rate for the initial sample of nonpublic schools is greater than or equal to 70 percent and meets minimum sample size requirements.[1] A jurisdiction eligible to receive a separate NAEP State Report under Guideline 1 will have its nonpublic school results included in that report if and only if that jurisdiction's weighted participation rate for the initial sample of nonpublic schools is greater than or equal to 70 percent and meets minimum sample size requirements. If a jurisdiction meets Guideline 2 but fails to meet Guideline 1, a separate State Report will be produced containing only nonpublic school results.

Guideline 3 – Publication of Combined Public and Nonpublic School Results:
A jurisdiction will have its combined results published in the 1998 NAEP Reading Report Card (or in other reports that include all state-level results) if and only if both Guidelines 1 and 2 are satisfied. Similarly, a jurisdiction eligible to receive a separate NAEP State Report under Guideline 1 will have its combined results included in that report if and only if Guideline 2 is also met.

Discussion: If a jurisdiction's public or nonpublic school participation rate for the initial sample of schools is below 70 percent, there is a substantial possibility that bias will be introduced into the assessment results. This possibility remains even after making statistical adjustments to compensate for school nonparticipation. There remains the likelihood that, in aggregate, the substitute schools are sufficiently dissimilar from the originals that they are replacing and represent too great a proportion of the population to discount such a difference. Similarly, the assumptions underlying the use of statistical adjustments to compensate for nonparticipation are likely to be significantly violated if the initial response rate falls below the 70 percent level. Guidelines 1, 2, and 3 take this into consideration. These guidelines are congruent with current NAGB policy, which requires that data for jurisdictions that do not have a 70 percent before-substitution participation rate be reported "in a different format," and with the Education Information Advisory Committee (EIAC) resolution, which calls for data from such jurisdictions not to be published.

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[1] Minimum sample size requirements for reporting nonpublic school data consist of two components: (1) a school sample size of six or more participating schools and (2) an assessed student sample size of at least 62.

The following guidelines concerning school and student participation rates in the NAEP state assessment program were established to address four significant ways in which nonresponse bias could be introduced into the jurisdiction sample estimates. Presented below are the conditions that will result in a jurisdiction's receiving a notation in the 1998 reports. Note that in order for a jurisdiction's results to be published with no notations, that jurisdiction must satisfy all guidelines.

Guidelines for Notations 4 and 5:

Reporting school and student participation rates with possible bias due to school nonresponse

Guideline 4 – Notation for Overall Public School Participation Rate: A jurisdiction that meets Guideline 1 will receive a notation if its weighted participation rate for the initial sample of public schools was below 85 percent and the weighted public school participation rate after substitution was below 90 percent.

Guideline 5 – Notation for Overall Nonpublic School Participation Rate: A jurisdiction that meets Guideline 2 will receive a notation if its weighted participation rate for the initial sample of nonpublic schools was below 85 percent and the weighted nonpublic school participation rate after substitution was below 90 percent.

Discussion: For jurisdictions that did not use substitute schools, the participation rates are based on participating schools from the original sample. In these situations, the NCES standards specify weighted school participation rates of at least 85 percent to guard against potential bias due to school nonresponse. Thus the first part of these guidelines, referring to the weighted school participation rate for the initial sample of schools, is in direct accordance with NCES standards.

To help ensure adequate sample representation for each jurisdiction participating in the NAEP 1998 state assessments, NAEP provided substitutes for nonparticipating public and nonpublic schools. For jurisdictions that used substitute schools, the assessment results will be based on the student data from all schools participating from both the original sample and the list of substitutes (unless both an initial school and its substitute eventually participated, in which case only the data from the initial school will be used).

The NCES standards do not explicitly address the use of substitute schools to replace initially selected schools that decide not to participate in the assessment. However, considerable technical consideration was given to this issue. Even though the characteristics of the substitute schools were matched as closely as possible to the characteristics of the initially selected schools, substitution does not entirely eliminate bias due to the nonparticipation of initially selected schools. Thus, for the weighted school participation rates including substitute schools, the guidelines were set at 90 percent.

If a jurisdiction meets either standard (i.e., 85 percent or higher prior to substitution or 90 percent or higher after substitution), there will be no notation for the relevant overall school participation rate.

Guidelines for Notations 6 and 7:

Important segments of the jurisdiction's student population that must be adequately represented to avoid possible nonresponse bias

Guideline 6 — Notation for Strata-Specific Public School Participation Rates:
A jurisdiction that is not already receiving a notation under Guideline 4 will receive a notation if the sample of public schools included a class of schools with similar characteristics that had a weighted participation rate (after substitution) of below 80 percent, and from which the nonparticipating schools together accounted for more than five percent of the jurisdiction's total weighted sample of public schools. The classes of schools from each of which a jurisdiction needed minimum school participation levels were determined by degree of urbanization, minority enrollment, and median household income of the area in which the school is located.

Guideline 7 — Notation for Strata-Specific Nonpublic School Participation Rates:
A jurisdiction that is not already receiving a notation under Guideline 5 will receive a notation if the sample of nonpublic schools included a class of schools with similar characteristics that had a weighted participation rate (after substitution) of below 80 percent, and from which the nonparticipating schools together accounted for more than five percent of the jurisdiction's total weighted sample of nonpublic schools. The classes of schools from each of which a jurisdiction needed minimum school participation levels were determined by type of nonpublic school (Catholic versus non-Catholic) and location (metropolitan versus nonmetropolitan).

Discussion: The NCES standards specify that attention should be given to the representativeness of the sample coverage. Thus, if some important segment of the jurisdiction's population is not adequately represented, it is of concern, regardless of the overall participation rate.

If nonparticipating schools are concentrated within a particular class of schools, the potential for substantial bias remains, even if the overall level of school participation appears to be satisfactory. Nonresponse adjustment cells for public schools have been formed within each jurisdiction, and the schools within each cell are similar with respect to minority enrollment, degree of urbanization, and/or median household income, as appropriate for each jurisdiction. For nonpublic schools, nonresponse adjustment cells are determined by type and location of school.

If the weighted response rate, after substitution, for a single adjustment cell falls below 80 percent, and more than five percent (weighted) of the sampled schools are nonparticipants from such a cell, the potential for nonresponse bias is too great. These guidelines are based on the NCES standard for stratum-specific school response rates.

Guidelines for Notations 8 and 9:

Possible student nonresponse bias

Guideline 8 — Notation for Overall Student Participation Rate in Public Schools:
A jurisdiction that meets Guideline 1 will receive a notation if the weighted student response rate within participating public schools was below 85 percent.

Guideline 9 — Notation for Overall Student Participation Rate in Nonpublic Schools:
A jurisdiction that meets Guideline 2 will receive a notation if the weighted student response rate within participating nonpublic schools was below 85 percent.

Discussion: These guidelines follow the NCES standard of 85 percent for overall student participation rates. The weighted student participation rate is based on all eligible students from initially selected or substitute schools who participated in the assessment in either an initial session or a make-up session. If the rate falls below 85 percent, the potential for bias due to students' nonresponse is too great.

Guidelines for Notations 10 and 11:

Possible nonresponse bias from inadequately represented strata

Guideline 10 – Notation for Strata-Specific Student Participation Rates in Public Schools:

A jurisdiction that is not already receiving a notation under Guideline 8 will receive a notation if the sampled students within participating public schools included a class of students with similar characteristics that had a weighted student response rate of below 80 percent, and from which the nonresponding students together accounted for more than five percent of the jurisdiction's weighted assessable public school student sample. Student groups from which a jurisdiction needed minimum levels of participation were determined by the age of the student, whether or not the student was classified as a student with a disability (SD) or of limited English proficiency (LEP), and the type of assessment session (monitored or unmonitored), as well as school level of urbanization, minority enrollment, and median household income of the area in which the school is located.

Guideline 11 – Notation for Strata-Specific Student Participation Rates in Nonpublic Schools:

A jurisdiction that is not already receiving a notation under Guideline 9 will receive a notation if the sampled students within participating nonpublic schools included a class of students with similar characteristics that had a weighted student response rate of below 80 percent, and from which the nonresponding students together accounted for more than five percent of the jurisdiction's weighted assessable nonpublic school student sample. Student groups from which a jurisdiction needed minimum levels of participation were determined by the age of the student, whether or not the student was classified as a student with a disability (SD) or of limited English proficiency (LEP), and the type of assessment session (monitored or unmonitored), as well as type and location of school.

Discussion: These guidelines address the fact that if nonparticipating students are concentrated within a particular class of students, the potential for substantial bias remains, even if the overall student participation level appears to be satisfactory. Student nonresponse adjustment cells have been formed using the school-level nonresponse adjustment cells, together with the student's age and the nature of the assessment session (unmonitored or monitored).

If the weighted response rate for a single adjustment cell falls below 80 percent, and more than five percent (weighted) of the invited students who do not participate in the assessment are from such a cell, the potential for nonresponse bias is too great. These guidelines are based on the NCES standard for stratum-specific student response rates.

Students with Disabilities (SD) and Limited English Proficient (LEP) Students

It is NAEP's intent to assess all selected students from the target population. Therefore, every effort is made to ensure that all selected students who are capable of participating in the assessment are assessed. Some students sampled for participation in NAEP can be excluded from the sample according to carefully defined criteria. These criteria were revised in 1996 to more clearly communicate a presumption of inclusion except under special circumstances. According to these criteria, students with Individualized Education Programs (IEPs) were to be included in the NAEP assessment except in the following cases:

1. The school's IEP team determined that the student could not participate, OR,
2. The student's cognitive functioning was so severely impaired that she or he could not participate, OR,
3. The student's IEP required that the student had to be tested with an accommodation or adaptation and that the student could not demonstrate his or her knowledge without that accommodation.

All LEP students receiving academic instruction in English for three years or more were to be included in the assessment. Those LEP students receiving instruction in English for less than three years were to be included unless school staff judged them as being incapable of participating in the assessment in English.

The reporting samples in the 1998 reading assessment used these criteria with no provisions made for accommodations.[2] As reported in the NAEP 1996 mathematics report, the introduction of the revised criteria, without the provision of accommodations, had little effect on the percentage of students with disabilities or LEP students who were assessed at either the national or state level. Thus, using the revised inclusion criteria in 1998 allows for comparability of results with previous reading assessments. Participation rates for the students with disabilities and LEP samples are presented in Tables A.5a through A.5d.

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[2] As part of NAEP's ongoing research on administrations in which accommodations are allowed, the 1998 reading assessment included a supplemental sample of students to allow research into inclusion, accommodations, and score validity issues. Results from the supplemental sample are not included in this report. However, these data will be analyzed as part of a later report focusing on issues of accommodation and inclusion. The data also provide the basis of a bridge to future reading assessments in which the provision of accommodations will be standard program practice.

Table A.5a

NAEP 1998 SD and LEP participation rates for the nation and the states: Grade 4 public schools

	Total Percentage of Students – SD and LEP		Percentage of Students – SD		Percentage of Students – LEP	
	Identified	**Excluded**	**Identified**	**Excluded**	**Identified**	**Excluded**
Nation	18	11	11	6	8	5
States						
Alabama	15	9	14	8	1	1
Arizona	22	10	10	5	14	6
Arkansas	11	5	10	4	1	1
California	30	15	4	3	26	13
Colorado	15	7	11	5	5	2
Connecticut	17	12	14	10	4	3
Delaware	18	8	16	7	2	0
Florida	17	9	13	7	5	2
Georgia	10	7	10	6	1	1
Hawaii	15	5	11	4	6	2
Illinois	13	9	9	6	5	3
Iowa	15	8	14	8	1	0
Kansas	13	6	12	5	1	1
Kentucky	13	10	13	10	0	0
Louisiana	16	13	15	13	1	1
Maine	14	8	13	7	1	0
Maryland	13	10	11	9	2	1
Massachusetts	20	9	17	7	4	2
Michigan	10	7	8	6	2	1
Minnesota	15	4	12	3	4	1
Mississippi	7	4	6	4	0	0
Missouri	13	7	13	7	1	0
Montana	9	4	9	4	0	0
Nevada	20	12	10	6	10	7
New Hampshire	15	5	14	5	0	0
New Mexico	28	11	14	9	15	4
New York	13	8	8	5	5	3
North Carolina	16	11	14	10	2	1
Oklahoma	16	10	13	9	4	1
Oregon	23	8	16	7	7	2
Rhode Island	21	8	15	6	7	2
South Carolina	18	12	17	12	1	0
Tennessee	14	5	13	4	1	0
Texas	28	14	17	8	12	7
Utah	15	6	10	3	6	3
Virginia	16	9	12	8	4	2
Washington	17	6	12	5	5	2
West Virginia	13	10	13	10	0	0
Wisconsin	14	9	12	7	3	2
Wyoming	14	4	13	4	1	0
Other Jurisdictions						
District of Columbia	15	10	10	8	6	2
DDESS	10	5	8	4	2	1
DoDDS	8	5	7	4	1	1
Virgin Islands	10	8	5	4	6	4

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient student.
To be excluded, a student was supposed to be classified as SD or as LEP and judged incapable of participating in the assessment. A student reported as belonging to both SD and LEP classifications is counted once in the overall rate (first column), once in the overall excluded rate (second column), and separately in the remaining columns.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table A.5b

NAEP 1998 SD and LEP participation rates for the nation and the states: Grade 4 nonpublic schools

	Total Percentage of Students – SD and LEP		Percentage of Students – SD		Percentage of Students – LEP	
	Identified	Excluded	Identified	Excluded	Identified	Excluded
Nation	5	1	5	1	0	0
States						
Arkansas	0	0	0	—	0	—
Colorado	2	0	2	0	0	—
Connecticut	7	1	6	0	1	1
Florida	5	1	5	1	0	—
Georgia	2	1	0	0	2	1
Hawaii	1	0	0	—	1	0
Illinois	0	0	0	—	0	—
Iowa	3	0	2	0	0	0
Louisiana	5	2	5	2	0	—
Maine	3	0	3	0	3	0
Maryland	4	1	4	1	0	—
Massachusetts	3	3	1	1	3	2
Michigan	1	1	1	1	0	—
Minnesota	3	1	3	1	0	—
Mississippi	2	0	0	—	2	0
Missouri	2	1	2	1	0	—
Montana	7	2	7	2	0	—
Nebraska	2	1	2	1	0	—
Nevada	1	1	1	1	0	—
New Mexico	13	6	13	6	0	—
New York	2	2	2	2	1	1
North Carolina	5	0	5	0	1	0
Rhode Island	3	0	3	0	0	—
South Carolina	2	1	1	0	1	1
Utah	0	0	0	—	0	—
Washington	2	0	2	0	0	—
West Virginia	0	0	0	—	0	—
Wisconsin	0	0	0	—	0	—
Wyoming	0	0	0	—	0	—
Other Jurisdictions						
Virgin Islands	0	0	0	—	0	—

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient student.
— Indicates there were no students in this category.
To be excluded, a student was supposed to be classified as SD or as LEP and judged incapable of participating in the assessment. A student reported as belonging to both SD and LEP classifications is counted once in the overall rate (first column), once in the overall excluded rate (second column), and separately in the remaining columns.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table A.5c

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NAEP 1998 SD and LEP participation rates for the nation and the states: Grade 8 public schools

	Total Percentage of Students – SD and LEP		Percentage of Students – SD		Percentage of Students – LEP	
	Identified	Excluded	Identified	Excluded	Identified	Excluded
Nation	14	6	10	5	4	1
States						
Alabama	14	7	13	7	1	1
Arizona	15	6	8	5	8	2
Arkansas	12	7	11	6	1	1
California	23	8	6	3	18	6
Colorado	15	5	10	4	5	2
Connecticut	15	8	14	7	1	1
Delaware	17	8	14	7	3	1
Florida	16	5	13	4	4	1
Georgia	12	6	11	5	2	1
Hawaii	14	6	11	5	4	2
Illinois	12	6	10	5	2	1
Kansas	11	5	10	4	1	0
Kentucky	11	5	10	5	0	0
Louisiana	13	9	13	9	1	1
Maine	13	6	13	6	0	0
Maryland	12	7	11	6	1	1
Massachusetts	16	6	14	5	2	1
Minnesota	12	4	9	3	3	1
Mississippi	11	7	11	7	0	0
Missouri	13	6	12	6	1	1
Montana	10	3	10	3	0	0
Nevada	16	8	10	5	7	3
New Mexico	20	7	14	6	7	1
New York	14	9	10	6	5	3
North Carolina	14	9	13	8	2	1
Oklahoma	14	9	12	9	2	0
Oregon	14	4	12	3	3	1
Rhode Island	17	5	13	3	4	2
South Carolina	12	6	11	6	0	0
Tennessee	14	4	14	4	1	0
Texas	18	7	14	6	6	2
Utah	12	5	10	4	2	1
Virginia	13	7	11	6	2	1
Washington	12	4	9	3	3	1
West Virginia	12	8	12	8	0	0
Wisconsin	14	8	13	7	1	1
Wyoming	11	2	10	2	1	0
Other Jurisdictions						
District of Columbia	15	9	9	6	6	3
DDESS	13	7	11	6	2	1
DoDDS	7	3	6	3	1	0
Virgin Islands	5	5	2	2	3	3

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient student.
To be excluded, a student was supposed to be classified as SD or as LEP and judged incapable of participating in the assessment. A student reported as belonging to both SD and LEP classifications is counted once in the overall rate (first column), once in the overall excluded rate (second column), and separately in the remaining columns.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table A.5d

NAEP 1998 SD and LEP participation rates for the nation and the states: Grade 8 nonpublic schools

	Total Percentage of Students – SD and LEP		Percentage of Students– SD		Percentage of Students– LEP	
	Identified	Excluded	Identified	Excluded	Identified	Excluded
Nation	2	0	2	0	0	—
States						
Arizona	17	2	10	2	8	1
Arkansas	4	4	4	4	0	—
California	1	0	1	0	0	—
Colorado	0	0	0	—	0	—
Connecticut	1	0	1	0	0	—
Florida	1	0	0	—	1	0
Georgia	0	0	0	—	0	—
Illinois	3	1	2	0	1	1
Louisiana	4	0	3	0	0	0
Maine	0	0	0	—	0	—
Maryland	1	0	1	0	0	—
Massachusetts	0	0	0	—	0	—
Missouri	0	0	0	—	0	—
Montana	0	0	0	—	0	—
Nebraska	2	2	2	1	1	1
Nevada	4	2	2	0	2	2
New Mexico	26	2	10	2	24	2
New York	4	2	3	2	0	0
North Carolina	8	5	7	5	0	0
Rhode Island	2	1	2	1	0	—
Washington	7	3	5	0	3	3
West Virginia	0	0	0	—	0	—
Wyoming	0	0	0	—	0	—
Other Jurisdictions						
Virgin Islands	0	0	0	—	0	—

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient student.
— Indicates there were no students in this category.
To be excluded, a student was supposed to be classified as SD or as LEP and judged incapable of participating in the assessment. A student reported as belonging to both SD and LEP classifications is counted once in the overall rate (first column), once in the overall excluded rate (second column), and separately in the remaining columns.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Data Collection

The 1998 reading assessment was conducted from January through March 1998, with some makeup sessions in early April. As with all NAEP assessments, data collection for the 1998 assessment was conducted by a trained field staff. For the national assessment, this was accomplished by Westat, Inc. staff. In keeping with the legislative requirements of the state assessment program, personnel from each of the participating states conducted the state reading assessments. NAEP's responsibilities included selecting the sample of schools and students for each participating state, developing the administration procedures and manuals, training the personnel who would conduct the assessment, and conducting an extensive quality assurance program.

Each participating jurisdiction was asked to appoint a state coordinator to be the liaison between NAEP and participating schools. The state coordinator was asked to gain the cooperation of selected schools, assist in scheduling, provide information necessary for sampling, and notify personnel about training. At the local school level, the administrators — usually school or district staff — were responsible for attending training, identifying excluded students, distributing school and teacher questionnaires, notifying sampled students and their teachers, administering the assessment session, completing the necessary paperwork, and preparing the materials for shipment.

Westat staff trained assessment administrators within the states in three and one-half hour sessions that included videotape and practice exercises to provide uniformity in procedures.

To provide quality control across states, a randomly selected 25 percent of the state assessment sessions were overseen by quality control monitors who were trained Westat staff. For nonpublic schools and for states that had not participated in the previous assessment, the percent of monitored sessions was 50 percent. The identity of the schools to be monitored was not revealed to state, district, or school personnel until shortly before the assessment was to commence. The analysis of the results for the unmonitored schools as compared to the monitored schools yielded no systematic differences that would suggest different procedures were used. See the forthcoming *1998 NAEP Technical Report* for details and results of this analysis.

Scoring

Materials from the 1998 assessment were shipped to National Computer Systems, where trained staff evaluated the responses to the constructed-response questions using scoring rubrics or guides prepared by Educational Testing Service (ETS). Each constructed-response question had a unique scoring rubric that defined the criteria used to evaluate students' responses. The extended constructed-response questions were evaluated with four-level rubrics, and many of the short constructed-response questions were rated according to three-level rubrics that permitted partial credit. Other short constructed-response questions were scored as either acceptable or unacceptable.

For the national and state reading assessments approximately 3.5 million constructed responses were scored. This number includes rescoring to monitor inter-rater reliability and trend reliability. In other words, scoring reliability was calculated within year (1998) and across years (1994 and 1998). The overall within-year percentages of agreement for the 1998 national reliability samples were 91 percent at grade 4, 91 percent at grade 8, and 90 percent at grade 12. The percentages of agreement across the assessment years for the national inter-year (1994 to 1998) reliability sample were 90 percent at grade 4, 88 percent at grade 8, and 86 percent at grade 12.

Data Analysis and IRT Scaling

Subsequent to the professional scoring, all information was transcribed to the NAEP database at ETS. Each processing activity was conducted with rigorous quality control. After the assessment information had been compiled in the database, the data were weighted according to the population structure. The weighting for the national and state samples reflected the probability of selection for each student as a result of the sampling design, adjusted for nonresponse. Through post-stratification, the weighting assured that the representation of certain subpopulations corresponded to figures from the U.S. Census and the Current Population Survey.[3]

Analyses were then conducted to determine the percentages of students who gave various responses to each cognitive and background question. In determining these percentages for the cognitive questions, a distinction was made between missing responses at the end of a block (i.e., missing responses subsequent to the last question the student answered) and missing responses prior to the last observed response. Missing responses before the last observed response were considered intentional omissions. Missing responses at the end of the block were considered "not reached" and treated as if the questions had not been presented to the student. In calculating response percentages for each question, only students classified as having been presented the question were included in the denominator of the statistic.

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[3] These procedures are described more fully below in the section "Weighting and Variance Estimation." For additional information about the use of weighting procedures in NAEP, see Johnson, E.G. (1989, December). Considerations and techniques for the analysis of NAEP data. *Journal of Education Statistics, 14*(4), 303–334.

It is standard ETS practice to treat all nonrespondents to the last question in a block as if they had not reached the question. For multiple-choice and short constructed response questions, this practice produces a reasonable pattern of results in that the proportion reaching the last question is not dramatically smaller than the proportion reaching the next-to-last question. However, for blocks that ended with extended constructed-response questions, the standard ETS practice would result in extremely large drops in the proportion of students attempting the final question. Therefore, for blocks ending with an extended constructed response question, students who answered the next-to-last question but did not respond to the extended constructed-response question were classified as having intentionally omitted the last question.

Item response theory (IRT) was used to estimate average reading scale scores for the nation, for various subgroups of interest within the nation, and for the states and territories. IRT models the probability of answering a question in a certain way as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance can be compared across groups such as those defined by grades and characteristics, including gender and race/ethnicity.

The results for 1992, 1994, and 1998 are presented on the NAEP reading scales. In 1992, a scale ranging from 0 to 500 was created to report performance for each reading purpose — literary and information at grade 4; and literary, information, and task at grades 8 and 12. The scales summarize student performance across all three types of questions in the assessment (multiple-choice, short constructed-response, and extended constructed-response). Results from subsequent reading assessments (1994 and 1998) are reported on these scales.

Each reading scale was initially based on the distribution of student performance across all three grades in the 1992 national assessment (grades 4, 8, and 12). In that year, the scales had an average of 250 and a standard deviation of 50. In addition, a composite scale was created as an overall measure of students' reading performance. This composite scale is a weighted average of the three separate scales for the three reading purposes. The weight for each reading purpose is proportional to the relative importance assigned to the reading purpose by the specifications developed through the consensus planning process and given in the framework.

In producing the reading scales, three distinct IRT models were used. Multiple-choice questions were scaled using the three-parameter logistic (3PL) model; short constructed-response questions rated as acceptable or unacceptable were scaled using the two-parameter logistic (2PL) model; and short constructed-response questions rated according to a three-level rubric, as well as extended constructed-response questions rated on a four-level rubric, were scaled using a generalized partial-credit (GPC) model.[4] Developed by ETS and first used in 1992, the GPC model permits the scaling of questions scored according to multipoint rating schemes. The model takes full advantage of the information available from each of the student response categories used for these more complex constructed-response questions.

One natural question about the reading scales concerns the amount of information contributed by each type of question. Unfortunately, this question has no simple answer for the NAEP reading assessment, due to the complex procedures used to form the composite reading scale. The information provided by a given question is determined by the IRT model used to scale the question. It is a function of the item parameters and varies by level of reading proficiency.[5] Thus, the answer to the query "How much information do the different types of questions provide?" will differ for each level of reading performance. When considering the composite reading scale, the answer is even more complicated. The reading data are scaled separately by the purposes of reading (reading for literary experience, reading to gain information, and reading to perform a task). The composite scale is a weighted combination of these subscales. IRT information functions are only strictly comparable when they are derived from the same calibration. Because the composite scale is based on three separate calibrations, there is no direct way to compare the information provided by the questions on the composite scale.

Because of the pBIB-spiraling design used by NAEP, students do not receive enough questions about a specific topic to provide reliable information about individual performance. Traditional test scores for individual students, even those based on IRT, would lead to misleading estimates of population characteristics, such as subgroup means and percentages of students at or above a certain scale score level. Consequently, NAEP constructs sets of plausible values designed to represent the distribution of performance in the population. A plausible value for an individual is not a scale score for that individual but may be regarded as a representative value from the distribution of potential scale scores for all students in the population with similar characteristics and identical patterns of item response. Statistics describing performance on the NAEP reading scale are based on the plausible values. Under the assumptions of the scaling models, these population estimates will be consistent, in the sense that the estimates approach the model-based population values as the sample size increases, which would not be the case for population estimates obtained by aggregating optimal estimates of individual performance.[6]

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[4] Muraki, E. (1992). A generalized partial credit model: Application of an EM algorithm. *Applied Psychological Measurement, 16*(2), 159–176.

[5] Donoghue, J.R. (1994). An empirical examination of the IRT information of polytomously scored reading items under the generalized partial credit model. *Journal of Educational Measurement, 31*(4), 295–311.

Item Mapping Procedures

To map items to particular points on the reading proficiency scale, a response probability convention had to be adopted that would divide those who had a higher probability of success from those who had a lower probability. Establishing a response probability convention has an impact on the mapping of the test items onto the reading scale. A lower boundary convention maps the reading items at lower points along the scale, and a higher boundary convention maps the same items at higher points on the scale. The underlying distribution of reading skills in the population does not change, but the choice of a response probability convention does have an impact on the proportion of the student population that is reported as "able to do" the items on the reading scales.

There is no obvious choice of a point along the probability scale that is clearly superior to any other point. If the convention were set with a boundary at 50 percent, those above the boundary would be more likely to get an item right than get it wrong, while those below the boundary would be more likely to get the item wrong than right. Although this convention has some intuitive appeal, it was rejected on the grounds that having a 50/50 chance of getting the item right shows an insufficient degree of mastery. If the convention were set with a boundary at 80 percent, students above the criterion would have a high probability of success with an item. However, many students below this criterion show some level of reading ability that would be ignored by such a stringent criterion. In particular, those in the range between 50 and 80 percent correct would be more likely to get the item right than wrong, yet would not be in the group described as "able to do" the item.

In a compromise between the 50 percent and the 80 percent conventions, NAEP has adopted two related response probability conventions: 74 percent for multiple-choice questions (to correct for the possibility of answering correctly by guessing) and 65 percent for constructed-response questions (where guessing is not a factor). These probability conventions were established, in part, based on an intuitive judgment that they would provide the best picture of students' reading skills.

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[6] For theoretical and empirical justification of the procedures employed, see Mislevy, R.J. (1988). Randomization-based inferences about latent variables from complex samples. *Psychometrika, 56*(2), 177–196.

For computational details, see National Assessment of Educational Progress. (1990). *Focusing the new design: NAEP 1988 technical report*, and the *NAEP 1990 technical report*. Princeton, NJ: Educational Testing Service.

Some additional support for the dual conventions adopted by NAEP was provided by Huynh.[7] He examined the IRT information provided by items, according to the IRT model used in scaling NAEP questions. ("Information" is used here in a technical sense. See the forthcoming *NAEP 1998 Technical Report* for details.) Following Bock,[8] Huynh decomposed the item information into that provided by a correct response [$P(\theta)*I(\theta)$] and that provided by an incorrect response [$(1 - P(\theta)) *I(\theta)$]. Huynh showed that the item information provided by a correct response to a constructed-response item is maximized at the point along the reading scale at which the probability of a correct response is two thirds (for multiple-choice items, the information provided by a correct response is maximized at the point at which the probability of getting the item correct is .74). It should be noted, however, that maximizing the item information $I(\theta)$, rather than the information provided by a correct response [$P(\theta)*I(\theta)$], would imply an item mapping criterion closer to 50 percent.

The results in this report are presented in terms of the composite reading scale. However, the reading assessment was scaled separately for the three purposes for reading. (The three purposes for reading specified in the NAEP framework are described in the Introduction to this report.) The composite is a weighted combination of the three subscales for purposes for reading. To obtain item map information presented in this report, a procedure by Donoghue[9] was used. This method models the relation between the item response function for the subscale and the subscale structure to derive the relationship between the item score and the composite scale (i.e., an item response function for the composite scale). This item response function is then used to derive the probability used in the mapping.

The careful reader may observe that cross-grade items (i.e., items administered at more than one grade) may map at different points at the different grades. There are several reasons for this. In 1992, the NAEP reading scales were initially established as cross-grade scales. The cross-grade scaling was accomplished by carrying out a concurrent IRT calibration using the 1992 data from all three grades. In this calibration, cross-grade items were constrained to have a common item characteristic curve at all three grades. In subsequent administrations, separate NAEP scalings have been carried out at each grade and then aligned with the original cross-grade scale. The within-grade scalings do not explicitly constrain item characteristic curves to be identical across the grades.

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[7] Huynh, H. (1994, October). *Some technical aspects of standard setting.* Paper presented at the Joint Conference on Standard Setting for Large Scale Assessment, Washington, DC.

[8] Bock, R. D. (1972). Estimating item parameters and latent ability when responses are scored in two or more latent categories. *Psychometrika, 37*, 29–51.

[9] Donoghue, J. R. (1997, March). *Item mapping to a weighted composite scale.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Because of the use of within-grade scaling procedures, items will not necessarily map to the same scale locations at each grade. Differences can result from: (1) estimation error — the map location of an item at each grade is a statistic and, like all statistics, is subject to some degree of sampling error, and (2) cross-grade differences in how the item functions — the relationship between performance on a specific item and overall reading performance is not necessarily identical across grades. (See the forthcoming *NAEP 1998 Technical Report* for further details.)

Weighting and Variance Estimation

A complex sample design was used to select the students who were assessed. The properties of a sample selected through a complex design could be very different from those of a simple random sample, in which every student in the target population has an equal chance of selection and in which the observations from different sampled students can be considered to be statistically independent of one another. Therefore, the properties of the sample for the complex data collection design were taken into account during the analysis of the assessment data.

One way that the properties of the sample design were addressed was by using sampling weights to account for the fact that the probabilities of selection were not identical for all students. All population and subpopulation characteristics based on the assessment data used sampling weights in their estimation. These weights included adjustments for school and student nonresponse.

Not only must appropriate estimates of population characteristics be derived, but appropriate measures of the degree of uncertainty must be obtained for those statistics. Two components of uncertainty are accounted for in the variability of statistics based on student ability: (1) the uncertainty due to sampling only a relatively small number of students, and (2) the uncertainty due to sampling only a relatively small number of cognitive questions. The first component accounts for the variability associated with the estimated percentages of students who had certain background characteristics or who answered a certain cognitive question correctly.

Because NAEP uses complex sampling procedures, conventional formulas for estimating sampling variability that assume simple random sampling are inappropriate. NAEP uses a jackknife replication procedure to estimate standard errors. The jackknife standard error provides a reasonable measure of uncertainty for any student information that can be observed without error.

However, because each student typically responds to only a few questions within any purpose for reading, the scale score for any single student would be imprecise. In this case, plausible values methodology can be used to describe the performance of groups and subgroups of students, but the underlying imprecision involved in this step adds another component of variability to statistics based on NAEP scale scores.[10] (Appendix B provides the standard errors for the results presented in this report.)

Typically, when the standard error is based on a small number of students or when the group of students is enrolled in a small number of schools, the amount of uncertainty associated with the standard errors may be quite large. Throughout this report, estimates of standard errors subject to a large degree of uncertainty are followed by the "!" symbol. In such cases, the standard errors — and any confidence intervals or significance tests involving these standard errors — should be interpreted cautiously. Additional details concerning procedures for identifying such standard errors are discussed in the forthcoming *NAEP 1998 Technical Report.*

The reader is reminded that, like findings from all surveys, NAEP results are subject to other kinds of error, including the effects of imperfect adjustment for student and school nonresponse and unknowable effects associated with the particular instrumentation and data collection methods. Nonsampling errors can be attributed to a number of sources — inability to obtain complete information about all selected schools in the sample (some students or schools refused to participate, or students participated but answered only certain questions); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording, coding, or scoring data; and other errors in collecting, processing, sampling, and estimating missing data. The extent of nonsampling error is difficult to estimate; and, because of their nature, the impact of such errors cannot be reflected in the data-based estimates of uncertainty provided in NAEP reports.

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[10] For further details, see Johnson, E.G., & Rust, K.F. (1992). Population inferences and variance estimation for NAEP data. *Journal of Educational Statistics, 17*(2), 175–190.

Drawing Inferences from the Results

Because the percentages of students in these subpopulations and their average scale scores are based on samples rather than on the entire population of fourth, eighth, or twelfth graders in the nation or a jurisdiction, the numbers reported are estimates. As such, they are subject to a measure of uncertainty, reflected in the standard error of the estimate. When the percentages or average scale scores of certain groups are compared, the standard error should be taken into account, and observed similarities or differences should not be relied on solely. Therefore, the comparisons discussed in this report are based on statistical tests that consider the standard errors of those statistics and the magnitude of the difference among the averages or percentages.

Using confidence intervals based on the standard errors provides a way to take into account the uncertainty associated with sample estimates, and to make inferences about the population averages and percentages in a manner that reflects that uncertainty. An estimated sample average scale score plus or minus two standard errors approximates a 95 percent confidence interval for the corresponding population quantity. This statement means that one can conclude with approximately a 95 percent level of confidence that the average performance of the entire population of interest (e.g., all fourth-grade students in public schools in a jurisdiction) is within plus or minus two standard errors of the sample average.

As an example, suppose that the average reading scale score of the students in a particular group was 256 with a standard error of 1.2. A 95 percent confidence interval for the population quantity would be as follows:

$$\text{Average} \pm 2 \text{ standard errors}$$
$$256 \pm 2 \times 1.2$$
$$256 \pm 2.4$$
$$(253.6,\ 258.4)$$

Thus, one can conclude with a 95 percent level of confidence that the average scale score for the entire population of students in that group is between 253.6 and 258.4.

Similar confidence intervals can be constructed for percentages, if the percentages are not extremely large or extremely small. Extreme percentages should be interpreted with caution. Adding or subtracting the standard errors associated with extreme percentages could cause the confidence interval to exceed 100 percent or go below 0 percent, resulting in numbers that are not meaningful. (The forthcoming *NAEP 1998 Technical Report* contains a more complete discussion of extreme percentages.)

Analyzing Group Differences in Averages and Percentages

The statistical tests determine whether the evidence, based on the data from the groups in the sample, is strong enough to conclude that the averages or percentages are actually different for those groups in the population. If the evidence is strong (i.e., the difference is statistically significant), the report describes the group averages or percentages as being different (e.g., one group performed higher than or lower than another group), regardless of whether the sample averages or percentages appear to be approximately the same. Occasionally, if an apparent difference is quite large but not statistically significant, this report will point out that fact.

The reader is cautioned to rely on the results of the statistical tests rather than on the apparent magnitude of the difference between sample averages or percentages when determining whether the sample differences are likely to represent actual differences among the groups in the population.

To determine whether a real difference exists between the average scale scores (or percentages of a certain attribute) for two groups in the population, one needs to obtain an estimate of the degree of uncertainty associated with the difference between the averages (or percentages) of these groups for the sample. This estimate of the degree of uncertainty, called the standard error of the difference between the groups, is obtained by taking the square of each group's standard error, summing the squared standard errors, and taking the square root of that sum.

$$\text{Standard Error of the Difference} = SE_{A\,B} = \sqrt{(SE_A^2 + SE_B^2)}$$

Similar to how the standard error for an individual group average or percentage is used, the standard error of the difference can be used to help determine whether differences among groups in the population are real. The difference between the averages or percentages of the two groups plus or minus two standard errors of the difference represents an approximate 95 percent confidence interval. If the resulting interval includes zero, there is insufficient evidence to claim a real difference between the groups in the population. If the interval does not contain zero, the difference between the groups is statistically significant (different) at the 0.05 level.

As an example of comparing groups, consider the problem of determining whether the average reading scale score of Group A is higher than that of Group B. Suppose that the sample estimates of the average scale scores and standard errors were as follows:

Group	Average Scale Score	Standard Error
A	218	0.9
B	216	1.1

The difference between the estimates of the average scale scores of Groups A and B is two points (218 − 216). The standard error of this difference is

$$\sqrt{(0.9^2 + 1.1^2)} = 1.4$$

Thus, an approximate 95 percent confidence interval for this difference is

plus or minus two standard errors of the difference

$$2 \pm 2 \times 1.4$$

$$2 \pm 2.8$$

$$(-0.8, 4.8)$$

The value zero is within the confidence interval; therefore, there is insufficient evidence to claim that Group A outperformed Group B.

In some cases, the differences between groups were not discussed in this report. This happened for one of two reasons: (a) if the comparison involved an extreme percentage (as defined above); or (b) if the standard error for either group was subject to a large degree of uncertainty (i.e., the coefficient of variation is greater than 20 percent, denoted by "!" in the tables).[11] In either case, the results of any statistical test involving that group needs to be interpreted with caution; and so, the results of such tests are not discussed in this report.

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[11] As was discussed in the section "Weighting and Variance Estimation," estimates of standard errors subject to a large degree of uncertainty are designated by the symbol "!". In such cases, the standard error — and any confidence intervals or significance tests among these standard errors — should be interpreted with caution.

Conducting Multiple Tests

The procedures described in this section and the certainty ascribed to intervals (e.g., a 95 percent confidence interval) are based on statistical theory that assumes that only one confidence interval or test of statistical significance is being performed. However, in Chapter 2 and Chapter 3 of this report, many different groups are being compared (i.e., multiple sets of confidence intervals are being analyzed). In sets of confidence intervals, statistical theory indicates that the certainty associated with the entire set of intervals is less than that attributable to each individual comparison from the set. To hold the significance level for the set of comparisons at a particular level (e.g., 0.05), adjustments (called "multiple comparison procedures"[12]) must be made to the methods described in the previous section. One such procedure, the False Discovery Rate (FDR) procedure[13] was used to control the certainty level.

Unlike the other multiple comparison procedures (e.g., the Bonferroni procedure) that control the familywise error rate (i.e., the probability of making even one false rejection in the set of comparisons), the FDR procedure controls the expected proportion of falsely rejected hypotheses. Furthermore, familywise procedures are considered conservative for large families of comparisons.[14] Therefore, the FDR procedure is more suitable for multiple comparisons in NAEP than other procedures. A detailed description of the FDR procedure appears in the forthcoming *NAEP 1998 Technical Report.*

The 1998 assessment is the first time NAEP has used the Benjamini-Hochberg procedure to maintain FDR for *all* multiple comparisons. Prior to the 1996 assessment, the Bonferroni procedure was used for multiple comparisons. In 1996, either the Bonferroni or Benjamini-Hochberg FDR procedure was used, depending on the testing situation. The Benjamini-Hochberg FDR procedure was used for large numbers of comparisons (i.e., any comparisons involving all of the states): (a) all pairwise comparisons of the states; (b) all comparisons of individual states to the national average; and (c) the trend for each state, which compared the current mean for the state to that state's mean in the previous assessment. All other multiple comparisons for the 1996 assessment used the Bonferroni procedure. The 1994 reading assessment used the Bonferroni procedure exclusively for multiple comparisons.

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[12] Miller, R.G. (1966). *Simultaneous statistical inference.* New York: Wiley.

[13] Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society, Series B, No. 1*, pp 298–300.

[14] Williams, V.S.L., Jones, L.V., & Tukey, J.W. (1994, December) *Controlling error in multiple comparisons with special attention to the National Assessment of Educational Progress.* Research Triangle Park, NC: National Institute of Statistical Sciences.

NAEP Reporting Groups

In this report, results are provided for groups of students defined by shared characteristics — region of the country, gender, race or ethnicity, parental education, school's type of location, eligibility for the Free/Reduced-Price School Lunch program, and type of school. Based on participation rate criteria, results are reported for subpopulations only when sufficient numbers of students and adequate school representation are present. For public school students, the minimum requirement is at least 62 students in a particular subgroup from at least five primary sampling units (PSUs).[15] For nonpublic school students, the minimum requirement is 62 students from at least six different schools for the state assessment program or from at least five PSUs for the national assessment. However, the data for all students, regardless of whether their subgroup was reported separately, were included in computing overall results. Definitions of the subpopulations referred to in this report are presented below.

Region

Results in NAEP are reported for four regions of the nation: Northeast, Southeast, Central, and West. Figure A.2 shows how states are subdivided into these NAEP regions. All 50 states and the District of Columbia are listed. Territories and the two Department of Defense Educational Activities jurisdictions are not assigned to any region.

Regional results are based on national assessment samples, not on aggregated state assessment program samples. Thus, the regional results are based on a sample that is different and separate from that used to report the state results.

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[15] For the national assessment, a PSU is a selected geographic region (a county, group of counties, or metropolitan statistical area). For the state assessment program, a PSU is most often a single school.

Figure A.2

States included in the four NAEP regions

Northeast	Southeast	Central	West
Connecticut	Alabama	Illinois	Alaska
Delaware	Arkansas	Indiana	Arizona
District of Columbia	Florida	Iowa	California
Maine	Georgia	Kansas	Colorado
Maryland	Kentucky	Michigan	Hawaii
Massachusetts	Louisiana	Minnesota	Idaho
New Hampshire	Mississippi	Missouri	Montana
New Jersey	North Carolina	Nebraska	Nevada
New York	South Carolina	North Dakota	New Mexico
Pennsylvania	Tennessee	Ohio	Oklahoma
Rhode Island	* Virginia	South Dakota	Oregon
Vermont	West Virginia	Wisconsin	Texas
* Virginia			Utah
			Washington
			Wyoming

* Note: The part of Virginia that is included in the Washington, DC metropolitan area is included in the Northeast region; the remainder of the state is included in the Southeast region.

Gender

Results are reported separately for males and females.

Race/Ethnicity

The race/ethnicity variable is derived from two questions asked of students and from school records, and it is used for race/ethnicity subgroup comparisons. Two questions from the set of general student background questions were used to determine race/ethnicity:

If you are Hispanic, what is your Hispanic background?

- ☐ I am not Hispanic
- ☐ Mexican, Mexican American, or Chicano
- ☐ Puerto Rican
- ☐ Cuban
- ☐ Other Spanish or Hispanic background

Students who responded to this question by filling in the second, third, fourth, or fifth oval were considered Hispanic. For students who filled in the first oval, did not respond to the question, or provided information that was illegible or could not be classified, responses to the following question were examined to determine their race/ethnicity.

Which best describes you?

☐ White (not Hispanic)

☐ Black (not Hispanic)

☐ Hispanic ("Hispanic" means someone who is Mexican, Mexican American, Chicano, Puerto Rican, Cuban, or other Spanish or Hispanic background)

☐ Asian or Pacific Islander ("Asian or Pacific Islander" means someone who is from a Chinese, Japanese, Korean, Filipino, Vietnamese, or other Asian or Pacific Islander background.)

☐ American Indian or Alaskan Native ("American Indian or Alaskan Native" means someone who is from one of the American Indian tribes or one of the original people of Alaska.)

☐ Other (specify) ______________________________

Students' race/ethnicity was then assigned on the basis of their responses. For students who filled in the sixth oval ("Other"), provided illegible information or information that could not be classified, or did not respond at all, race/ethnicity was assigned as determined by school records.

An exception in this definition of race/ethnicity was made for Hawaii (i.e., students in Hawaii in the state assessment). Students from Hawaii who specified Asian or Pacific Islander in response to the question "Which best describes you?" were categorized in the Asian or Pacific Islander race/ethnicity classification, no matter what response they gave to the question, "If you are Hispanic, what is your Hispanic background?"

Race/ethnicity could not be determined for students who did not respond to either of the demographic questions and whose schools did not provide information about race/ethnicity.

Details of how race/ethnicity classifications were derived are presented so that readers can determine how useful the results are for their particular purposes. Also, some students indicated that they were from a Hispanic background (e.g., Puerto Rican or Cuban) and that a racial/ethnic category other than Hispanic best described them. These students were classified as Hispanic based on the rules described above. Furthermore, information from the schools did not always correspond to how students described themselves.

Therefore, the racial/ethnic results presented in this report attempt to provide a clear picture based on several sources of information.

In the 1992 and 1998 NAEP reading assessments the mutually exclusive racial/ethnic categories were: White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaskan native). In the 1994 NAEP reading assessment, the Asian Pacific/Islander category was divided into separate Asian and Pacific Islander categories. To make comparisons of performance across all three assessments, the separate Asian and Pacific Islander categories used in 1994 have been collapsed into a single category to report results.

Parents' Highest Level of Education

For students in grades 8 and 12, the variable representing the level of parental education is derived from responses to two questions from the set of general student background questions. Eighth- and twelfth-grade students were asked to indicate the extent of their mother's education with the following question.

How far in school did your mother go?

- ☐ She did not finish high school.
- ☐ She graduated from high school.
- ☐ She had some education after high school.
- ☐ She graduated from college.
- ☐ I don't know.

Eighth- and twelfth-grade students were asked a similar question about their father's education level as shown below.

How far in school did your father go?

- ☐ He did not finish high school.
- ☐ He graduated from high school.
- ☐ He had some education after high school.
- ☐ He graduated from college.
- ☐ I don't know.

The information was combined into one parental education reporting variable determined through the following process. If a student indicated the extent of education for only one parent, that level was included in the data. If a student indicated the extent of education for both parents, the higher of the two levels was included in the data. If a student did not know the level of education for both parents or did not know the level for one parent and did not respond for the other, the parental education level was classified as "I don't know." If the student did not respond for either parent, the student was recorded as having provided no response. (Nationally, nine percent of eighth graders and two percent of twelfth graders reported that they did not know the education level of either of their parents.)

Type of Location

Results are reported for students attending schools in three mutually exclusive location types: central city, urban fringe/large town, and rural/small town:

Central City: This category includes central cities of all Standard Metropolitan Statistical Areas (SMSA) as defined by the Office of Management and Budget. Central City is a geographical term and is not synonymous with "inner city."

Urban Fringe/Large Town: The urban fringe category includes all densely settled places and areas within SMSA's that are classified as urban by the Bureau of the Census, but which do not qualify as Central City. A Large Town is defined as a place outside a SMSA with a population greater than or equal to 25,000.

Rural/Small Town: Rural includes all places and areas with populations of less than 2,500 that are classified as rural by the Bureau of the Census. A Small Town is defined as a place outside a SMSA with a population of less than 25,000, but greater than or equal to 2,500.

Eligibility for the Free/Reduced-Price School Lunch Program

Based on available school records, students were classified as either currently eligible for the free/reduced-price lunch component of the Department of Agriculture's National School Lunch Program or not eligible. The classification applies only to the school year when the assessment was administered (i.e., the 1997–98 school year) and is not based on eligibility in previous years. If school records were not available, the student was classified as "Information not available." If the school did not participate in the program, all students in that school were classified as "Information not available."

Type of School

Results are reported by the type of school that the student attends — public or nonpublic. Nonpublic schools include Catholic and other private schools. Although Bureau of Indian Affairs (BIA) schools and Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) are not included in either the public or nonpublic categories, they are included in the overall national results. (A separate sample for DDESS was included as a jurisdiction in the state assessment.)

Cautions in Interpretations

As described earlier, the NAEP reading scale makes it possible to examine relationships between students' performance and various background factors measured by NAEP. However, a relationship that exists between achievement and another variable does not reveal its underlying cause, which may be influenced by a number of other variables. Similarly, the assessments do not capture the influence of unmeasured variables. The results are most useful when they are considered in combination with other knowledge about the student population and the educational system, such as trends in instruction, changes in the school-age population, and societal demands and expectations.

Grade 12 Participation Rates and Motivation

NAEP has been described as a "low-stakes" assessment. That is, students receive no individual scores, and their NAEP performance has no effect on their grades, promotions, or graduation. There has been continued concern that this lack of consequences affects participation rates of students and schools, as well as the motivation of students to perform well on NAEP. Of particular concern has been the performance of twelfth graders, who typically have lower student participation rates than fourth and eighth graders, and who are more likely to omit responses compared to the younger cohorts.

Participation Rates

In NAEP, there has been a consistent pattern of lower participation rates for older students. In the 1994 NAEP assessments, for example, the student participation rates were 93 percent and 91 percent at grades 4 and 8, respectively. At the twelfth grade, however, the participation rate was 81 percent. School participation rates (the percentage of sampled schools that participated in the assessment) have also typically decreased with grade level. Again citing the 1994 assessments, the school participation rate was 86 percent for the fourth grade, 86 percent for the eighth grade, and 79 percent for the twelfth grade.

The effect of participation rates on student performance, however, is unclear. Students may choose not to participate in NAEP for many reasons, such as desire to attend regular classes so as not to miss important instruction or fear of not doing well on NAEP. Similarly, there are a variety of reasons for which various schools do not participate. The sampling weights and nonresponse adjustments, described earlier in this appendix, provide an approximate statistical adjustment for nonparticipation. However, the effect of some school and student nonparticipation may have some undetermined effect on results.

Motivation

To the extent that students in the NAEP sample are not trying their hardest, NAEP results may underestimate student performance. The concern increases as students get older, and is particularly pronounced for twelfth graders. The students themselves furnish some evidence about their motivation. As part of the background questions, students were asked how important it was to do well on the NAEP reading assessment. They were asked to indicate whether it was very important, important, somewhat important, or not very important to them. The percentage of students indicating they thought it was either important or very important to do well was 86 percent for fourth graders, 58 percent for eighth graders, and 31 percent for twelfth graders.

Several factors may contribute to this pattern. NAEP was administered in the late winter, when high school seniors often have other things on their minds. More recently, the addition to NAEP of more constructed-response questions, which in many instances take longer for the student to answer, may also have had some effect on twelfth graders completing the assessment. As with participation rates, however, the combined effect of these and other factors is unknown.

It is also interesting to note that students who indicated it was very important for them to do well on NAEP did not have the highest average scores. In fact, at grades 8 and 12, students who reported it was not very important to do well also had higher average scores than those who reported it was very important to do well. These data further cloud the relationship between motivation and performance on NAEP.

Need for Future Research

More research is needed to delineate the factors that contribute to nonparticipation and lack of motivation. To that end, NCES plans to commission a study of high school transcripts to learn more about the academic performance of twelfth-grade students who do not participate in the assessment. In addition, NCES is currently investigating how various types of incentives can be effectively used to increase participation in NAEP.

APPENDIX B

Standard Errors

The comparisons presented in this report are based on statistical tests that consider the magnitude of the difference between group averages or percentages and the standard errors of those statistics. This appendix contains the standard errors for the estimated averages and percentages in all the tables and figures throughout this report. Because NAEP scores and percentages are based on samples rather than the entire population(s), the results are subject to a measure of uncertainty reflected in the standard errors of the estimates. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample.

Figure B1.1

Standard errors for average reading scale scores for the nation: 1992, 1994, and 1998

	1992	1994	1998
Grade 12	0.6	0.7	0.7
Grade 8	0.9	0.8	0.8
Grade 4	0.9	1.0	0.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B1.1

Standard errors for reading scale score percentiles: 1992, 1994, and 1998

	Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
Grade 4						
1998	0.8	1.6	0.9	1.0	0.9	1.0
1994	1.0	1.6	1.2	1.1	1.1	1.5
1992	0.9	1.6	1.0	1.2	1.0	1.4
Grade 8						
1998	0.8	1.8	0.8	0.8	0.6	1.0
1994	0.8	1.4	1.1	0.7	1.1	1.1
1992	0.9	1.1	1.1	0.9	1.0	1.3
Grade 12						
1998	0.7	1.3	1.3	0.8	0.9	0.7
1994	0.7	0.9	0.9	0.8	0.9	1.3
1992	0.6	0.8	0.8	0.8	0.6	0.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B1.2

Standard errors for percentage of students at or above the reading achievement levels for the nation: 1992, 1994, and 1998

	Nation			
	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4				
1998	0.9	0.9	0.9	0.5
1994	1.0	1.0	1.1	0.7
1992	1.1	1.1	1.2	0.6
Grade 8				
1998	0.9	0.9	0.9	0.4
1994	0.9	0.9	0.9	0.3
1992	1.0	1.0	1.1	0.3
Grade 12				
1998	0.9	0.9	0.9	0.4
1994	0.7	0.7	1.0	0.5
1992	0.6	0.6	0.8	0.3

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B1.3

Standard errors for percentage of students within each achievement level range for the nation: 1992, 1994, and 1998

	Below Basic	At Basic	At Proficient	At Advanced
Grade 4				
1998	0.9	0.7	0.7	0.5
1994	1.0	0.7	0.8	0.7
1992	1.1	0.9	0.9	0.6
Grade 8				
1998	0.9	0.8	0.9	0.4
1994	0.9	0.7	0.8	0.3
1992	1.0	0.7	1.0	0.3
Grade 12				
1998	0.9	0.8	1.0	0.4
1994	0.7	0.7	0.9	0.5
1992	0.6	0.7	0.8	0.3

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Standard errors for sample response percentages

Table B1.3

Grade 4	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
1.6	2.5	2.4	2.5

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.4

Grade 4	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
1.5	2.9	3.1	3.9

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.5

Grade 4	Percentage "Essential" or better within achievement level intervals		
Overall percentage "Essential" or better	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
1.4	3.2	2.9	4.2

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Standard errors for sample response percentages

Table B1.6

Grade 8	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
1.3	2.2	2.3	---

* NAEP Reading composite scale range.

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.7

Grade 8	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
1.3	1.8	3.3	---

* NAEP Reading composite scale range.

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.8

Grade 8	Percentage "Essential" or better within achievement level intervals		
Overall percentage "Essential" or better	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
0.9	1.4	2.3	---

* NAEP Reading composite scale range.

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Standard errors for sample response percentages

Table B1.9

Grade 12	Percentage correct within achievement level intervals		
Overall percentage correct	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
1.3	2.7	2.2	4.1

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.10

Grade 12	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
1.5	2.2	2.5	5.1

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B1.11

Grade 12	Percentage "Acceptable" within achievement level intervals		
Overall percentage "Acceptable"	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
1.2	2.9	2.8	8.2

* NAEP Reading composite scale range.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure B2.1

Standard errors for average reading scale scores by gender: 1992, 1994, and 1998

	Male 1992	Male 1994	Male 1998
Grade 12	0.7	0.8	1.0
Grade 8	1.1	1.0	0.9
Grade 4	1.2	1.3	1.1

	Female 1992	Female 1994	Female 1998
Grade 12	0.7	0.8	0.7
Grade 8	1.0	1.0	0.9
Grade 4	1.0	1.1	0.7

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B2.2

Standard errors for average reading scale scores by race/ethnicity: 1992, 1994, and 1998

White	1992	1994	1998
Grade 12	0.6	0.7	0.7
Grade 8	1.2	1.0	0.9
Grade 4	1.2	1.3	0.8

Black	1992	1994	1998
Grade 12	1.4	1.6	1.7
Grade 8	1.6	1.7	1.5
Grade 4	1.6	1.7	1.7

Hispanic	1992	1994	1998
Grade 12	2.3	1.5	1.5
Grade 8	1.4	1.4	2.1
Grade 4	2.1	2.6	1.8

Asian/Pacific Islander	1992	1994	1998
Grade 12	3.2	1.9	3.3
Grade 8	3.0	3.5	3.7
Grade 4	3.3	4.4	2.7

American Indian	1992	1994	1998
Grade 12	---	5.3	5.4
Grade 8	3.7	4.2	4.7
Grade 4	4.6	3.4	3.1

NOTE: The separate Asian and Pacific Islander response categories in 1994 were combined to allow for comparisons across assessments.

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B2.1

Standard errors for differences in average reading scale scores by race/ethnicity and by gender: 1992, 1994, and 1998

	Race/ethnicity						Gender		
	White - Black (Difference)			White - Hispanic (Difference)			Female - Male (Difference)		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Grade 4	2.0	2.1	1.9	2.4	2.9	2.0	1.6	1.7	1.3
Grade 8	1.9	2.0	1.7	1.8	1.7	2.3	1.5	1.4	1.3
Grade 12	1.6	1.8	1.9	2.4	1.6	1.7	1.0	1.2	1.2

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B2.3

Standard errors for average reading scale scores by parents' highest education level: 1992, 1994, and 1998

	Graduated from college		
	1992	**1994**	**1998**
Grade 12	0.8	1.0	0.7
Grade 8	1.0	0.9	0.9

	Some education after high school		
	1992	**1994**	**1998**
Grade 12	0.8	1.0	1.0
Grade 8	1.1	1.3	1.3

	Graduated from high school		
	1992	**1994**	**1998**
Grade 12	0.8	1.3	1.1
Grade 8	1.4	1.2	1.3

	Did not finish high school		
	1992	**1994**	**1998**
Grade 12	1.4	1.5	1.7
Grade 8	1.4	1.9	1.8

	I don't know		
	1992	**1994**	**1998**
Grade 12	2.8	2.7	2.8
Grade 8	2.0	1.6	1.9

NOTE: Due to significant changes in the wording of the parent education question in 1998 for Grade 4 students, the results for these students are not reported.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B2.4

Standard errors for average reading scale scores by region: 1992, 1994, and 1998

Northeast	1992	1994	1998
Grade 12	1.1	1.7	1.7
Grade 8	1.7	2.3	1.6
Grade 4	3.6	2.1	1.4

Southeast	1992	1994	1998
Grade 12	1.1	1.2	1.7
Grade 8	1.7	1.7	1.4
Grade 4	2.3	2.0	1.3

Central	1992	1994	1998
Grade 12	1.1	1.2	1.2
Grade 8	2.2	1.7	1.9
Grade 4	1.4	2.4	2.0

West	1992	1994	1998
Grade 12	1.5	1.4	1.2
Grade 8	1.2	1.2	1.7
Grade 4	1.4	2.0	1.9

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B2.5

Standard errors for average reading scale scores by type of location: 1992, 1994, and 1998

	Central city		
	1992	**1994**	**1998**
Grade 12	1.5	1.1	1.6
Grade 8	1.6	1.6	1.6
Grade 4	1.3	2.1	1.7

	Urban fringe/large town		
	1992	**1994**	**1998**
Grade 12	0.9	1.1	1.2
Grade 8	1.3	1.2	1.3
Grade 4	1.9	1.8	1.6

	Rural/small town		
	1992	**1994**	**1998**
Grade 12	1.4	1.4	1.3
Grade 8	2.4	1.7	1.5
Grade 4	2.4	1.8	1.3

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B2.2

Standard errors for average reading scale scores by free/reduced-price lunch program eligibility: 1998

	Grade 4	Grade 8	Grade 12
Eligible	1.2	1.3	1.2
Not eligible	0.9	1.0	0.8
Information not available	2.8	2.2	1.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure B2.6

Standard errors for average reading scale scores by type of school: 1992, 1994, and 1998

	Public		
	1992	1994	1998
Grade 12	0.7	0.7	0.8
Grade 8	1.0	0.8	0.8
Grade 4	1.0	1.1	0.8

	Nonpublic		
	1992	1994	1998
Grade 12	1.3	1.9	1.7
Grade 8	2.0	1.4	1.6
Grade 4	1.7	2.5	2.3

	Nonpublic: Catholic		
	1992	1994	1998
Grade 12	1.5	2.4	2.0
Grade 8	1.9	1.3	1.6
Grade 4	2.2	3.3	2.5

	Other nonpublic		
	1992	1994	1998
Grade 12	2.9	2.2	4.6
Grade 8	3.0	2.4	3.7
Grade 4	2.9	3.7	4.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B3.1

Standard errors for percentage of students at or above reading achievement levels by gender: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Male	1.6	1.6	1.4	0.7	1.4	1.4	1.3	0.8	1.4	1.4	1.2	0.6
Female	1.3	1.3	1.4	0.8	1.2	1.2	1.5	0.9	1.0	1.0	1.0	0.6
Grade 8												
Male	1.3	1.3	1.2	0.2	1.1	1.1	1.1	0.3	1.2	1.2	1.0	0.3
Female	1.1	1.1	1.4	0.6	1.1	1.1	1.3	0.5	0.8	0.8	1.2	0.5
Grade 12												
Male	1.0	1.0	1.1	0.4	1.1	1.1	1.1	0.3	1.2	1.2	1.2	0.4
Female	0.7	0.7	1.3	0.4	1.0	1.0	1.1	0.9	1.0	1.0	1.0	0.6

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Figure B3.1

Standard errors for percentage of students within each reading achievement level range by gender: 1998

	1998			
	Below Basic	At Basic	At Proficient	At Advanced
	Grade 4			
Male	1.4	1.0	0.9	0.6
Female	1.0	1.1	0.9	0.6
	Grade 8			
Male	1.2	0.9	1.0	0.3
Female	0.8	1.1	1.0	0.5
	Grade 12			
Male	1.2	1.2	1.2	0.4
Female	1.0	0.9	1.2	0.6

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B3.2

Standard Errors for percentage of students at or above reading achievement levels by race/ethnicity: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
White	1.3	1.3	1.7	0.9	1.2	1.2	1.4	0.9	1.1	1.1	1.1	0.7
Black	2.3	2.3	1.4	0.4	2.5	2.5	1.0	0.4	1.7	1.7	1.0	0.5
Hispanic	2.2	2.2	1.8	0.8	2.6	2.6	1.6	0.6	1.9	1.9	1.2	0.4
Asian/Pacific Islander	4.8	4.8	4.7	1.8	3.9	3.9	5.5	4.9	4.2	4.2	3.9	2.9
American Indian	6.6	6.6	4.5	2.1	4.4	4.4	3.8	2.1	5.5	5.5	3.8	1.2
Grade 8												
White	1.1	1.1	1.5	0.5	1.1	1.1	1.3	0.4	0.9	0.9	1.2	0.5
Black	1.8	1.8	1.1	---	1.9	1.9	1.2	0.3	2.4	2.4	1.2	0.3
Hispanic	2.2	2.2	1.3	0.3	1.6	1.6	1.5	0.3	2.4	2.4	1.2	0.2
Asian/Pacific Islander	3.2	3.2	4.0	2.6	4.4	4.4	4.7	1.7	4.3	4.3	4.9	1.2
American Indian	5.0	5.0	7.3	---	5.6	5.6	5.6	---	6.2	6.2	5.5	---
Grade 12												
White	0.7	0.7	1.0	0.4	0.7	0.7	1.1	0.7	0.8	0.8	1.1	0.5
Black	2.3	2.3	1.5	0.3	2.2	2.2	1.5	0.2	2.5	2.5	1.6	0.3
Hispanic	2.5	2.5	3.2	0.7	2.4	2.4	1.8	0.5	1.9	1.9	1.4	0.7
Asian/Pacific Islander	3.4	3.4	4.4	1.6	2.3	2.3	2.4	1.1	3.3	3.3	3.2	1.5
American Indian	---	---	---	---	6.5	6.5	6.7	---	7.3	7.3	8.4	---

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Figure B3.2

Standard errors for percentage of students within each reading achievement level range by race/ethnicity: 1998

	1998			
	Below Basic	At Basic	At Proficient	At Advanced
Grade 4				
White	1.1	0.8	0.9	0.7
Black	1.7	1.6	1.0	0.5
Hispanic	1.9	1.5	1.2	0.4
Asian/Pacific Islander	4.2	4.7	3.4	2.9
American Indian	5.5	5.2	4.5	1.2
Grade 8				
White	0.9	0.8	1.1	0.5
Black	2.4	2.4	1.1	0.3
Hispanic	2.4	2.1	1.2	0.2
Asian/Pacific Islander	4.3	4.3	4.3	1.2
American Indian	6.2	5.9	5.6	
Grade 12				
White	0.8	1.0	1.2	0.5
Black	2.5	1.7	1.5	0.3
Hispanic	1.9	1.8	1.6	0.7
Asian/Pacific Islander	3.3	3.1	2.6	1.5
American Indian	7.3	9.6	6.8	

-- Standard error cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B3.3

Standard errors for percentage of students at or above reading achievement levels by parents' highest education level: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 8												
Graduated from college	1.0	1.0	1.4	0.7	1.0	1.0	1.2	0.5	0.9	0.9	1.3	0.6
Some education after high school	1.5	1.5	1.4	0.7	1.5	1.5	1.5	0.6	1.4	1.4	2.0	0.6
Graduated from high school	1.8	1.8	1.5	0.3	1.7	1.7	1.6	0.4	2.0	2.0	1.3	0.4
Did not finish high school	2.2	2.2	1.9	0.3	3.0	3.0	1.8	- - -	2.5	2.5	1.5	- - -
I don't know	2.6	2.6	2.0	- - -	2.5	2.5	1.3	- - -	2.3	2.3	1.3	- - -
Grade 12												
Graduated from college	0.7	0.7	1.3	0.6	0.7	0.7	1.4	1.1	1.0	1.0	1.1	0.6
Some education after high school	1.0	1.0	1.4	0.5	1.3	1.3	1.4	0.5	1.0	1.0	1.6	0.6
Graduated from high school	1.2	1.2	1.4	0.3	1.7	1.7	1.7	0.5	1.6	1.6	1.3	0.4
Did not finish high school	2.2	2.2	2.1	- - -	2.5	2.5	1.5	0.4	2.6	2.6	1.6	0.6
I don't know	4.9	4.9	2.0	- - -	3.3	3.3	2.3	- - -	3.0	3.0	1.6	- - -

- - - Standard error estimate cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Figure B3.3

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Standard errors for percentage of students within each reading achievement level range by parents' highest education level: 1998

	Below Basic	At Basic	At Proficient	At Advanced
	1998			
	Grade 8			
Graduated from college	0.9	1.3	1.1	0.6
Some education after high school	1.4	1.9	1.7	0.6
Graduated from high school	2.0	1.8	1.4	0.4
Did not finish high school	2.5	2.6	1.5	- - -
I don't know	2.3	2.1	1.3	- - -
	Grade 12			
Graduated from college	1.0	1.1	1.3	0.6
Some education after high school	1.0	1.4	1.8	0.6
Graduated from high school	1.6	1.8	1.3	0.4
Did not finish high school	2.6	2.7	1.7	0.6
I don't know	3.0	2.8	1.6	- - -

Standard error estimate cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B3.4

Standard errors for percentage of students at or above reading achievement levels by region: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Northeast	3.6	3.6	4.3	2.4	2.1	2.1	2.4	1.4	1.7	1.7	1.7	1.2
Southeast	3.1	3.1	2.6	1.0	2.3	2.3	2.1	0.9	1.6	1.6	1.4	0.7
Central	1.7	1.7	2.1	1.1	2.6	2.6	2.5	1.1	2.2	2.2	1.9	0.9
West	1.7	1.7	1.7	0.7	2.1	2.1	1.8	0.8	2.3	2.3	2.0	0.8
Grade 8												
Northeast	2.2	2.2	2.1	0.6	2.2	2.2	2.7	0.8	1.3	1.3	1.9	1.1
Southeast	1.8	1.8	2.5	0.5	1.9	1.9	1.4	0.4	1.8	1.8	1.7	0.5
Central	2.3	2.3	2.4	0.7	1.7	1.7	2.2	0.7	2.2	2.2	2.1	0.7
West	1.5	1.5	1.5	0.6	1.3	1.3	1.3	0.4	1.8	1.8	1.8	0.3
Grade 12												
Northeast	1.5	1.5	1.7	0.6	1.7	1.7	1.9	1.0	1.7	1.7	2.6	0.8
Southeast	1.4	1.4	1.4	0.4	1.2	1.2	2.0	0.6	2.0	2.0	2.0	0.6
Central	1.1	1.1	1.7	0.5	1.5	1.5	1.6	0.6	1.2	1.2	1.3	0.8
West	1.5	1.5	2.5	0.6	1.3	1.3	1.9	1.1	1.5	1.5	1.5	0.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Figure B3.4

Standard errors for percentage of students within each reading achievement level range by region: 1998

	1998			
	Below Basic	**At Basic**	**At Proficient**	**At Advanced**
	Grade 4			
Northeast	1.7	1.3	1.3	1.2
Southeast	1.6	1.2	1.0	0.7
Central	2.2	1.1	1.5	0.9
West	2.3	1.9	1.5	0.8
	Grade 8			
Northeast	1.3	1.6	1.8	1.1
Southeast	1.8	1.7	1.6	0.5
Central	2.2	1.8	1.9	0.7
West	1.8	1.3	1.8	0.3
	Grade 12			
Northeast	1.7	1.9	2.3	0.8
Southeast	2.0	1.4	1.8	0.6
Central	1.2	1.3	1.4	0.8
West	1.5	1.0	1.5	0.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B3.5

Standard errors for percentage of students at or above reading achievement levels by type of location: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
Grade 4												
Central city	1.8	1.8	1.2	0.6	2.5	2.5	1.8	1.0	2.0	2.0	1.6	0.7
Urban fringe/ large town	2.2	2.2	2.4	1.1	1.6	1.6	1.9	1.1	1.8	1.8	1.6	0.9
Rural/ small town	2.5	2.5	2.7	1.6	2.5	2.5	1.9	0.7	1.7	1.7	2.1	0.8
Grade 8												
Central city	1.8	1.8	1.6	0.4	1.6	1.6	1.4	0.6	1.7	1.7	1.5	0.5
Urban fringe/ large town	1.5	1.5	1.5	0.5	1.4	1.4	1.4	0.3	1.5	1.5	1.6	0.6
Rural/ small town	2.6	2.6	2.7	0.7	1.8	1.8	2.1	0.6	1.8	1.8	1.7	0.5
Grade 12												
Central city	1.4	1.4	2.3	0.5	1.2	1.2	1.5	0.7	1.5	1.5	1.9	0.7
Urban fringe/ large town	1.0	1.0	1.4	0.4	1.2	1.2	1.4	0.8	1.3	1.3	1.5	0.5
Rural/ small town	1.4	1.4	2.0	0.6	1.4	1.4	1.8	0.5	1.6	1.6	1.6	0.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B3.5

Standard errors for percentage of students within each reading achievement level range by type of location: 1998

	1998			
	Below Basic	**At Basic**	**At Proficient**	**At Advanced**
Grade 4				
Central city	2.0	1.4	1.2	0.7
Urban fringe/ large town	1.8	1.1	1.6	0.9
Rural/ small town	1.7	1.9	1.8	0.8
Grade 8				
Central city	1.7	1.3	1.3	0.5
Urban fringe/ large town	1.5	1.2	1.5	0.6
Rural/ small town	1.8	1.4	1.4	0.5
Grade 12				
Central city	1.5	1.0	1.6	0.7
Urban fringe/ large town	1.3	1.4	1.4	0.5
Rural/ small town	1.6	1.3	1.7	0.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B3.6

Standard errors for percentage of students at or above reading achievement levels by free/reduced-price lunch program eligibility: 1998

	1998			
	Below Basic	**At or above Basic**	**At or above Proficient**	**Advanced**
Grade 4				
Eligible	1.4	1.4	1.2	0.4
Not eligible	1.2	1.2	1.3	0.9
Information not available	2.7	2.7	3.8	1.6
Grade 8				
Eligible	1.6	1.6	1.0	---
Not eligible	1.0	1.0	1.4	0.6
Information not available	2.6	2.6	2.6	0.7
Grade 12				
Eligible	2.0	2.0	1.1	0.4
Not eligible	0.9	0.9	1.1	0.5
Information not available	1.7	1.7	2.0	0.9

--- Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Figure B3.6

Standard errors for percentage of students within each reading achievement level range by free/reduced-price lunch program eligibility: 1998

	1998			
	Below Basic	**At Basic**	**At Proficient**	**At Advanced**
Grade 4				
Eligible	1.4	1.4	1.1	0.4
Not eligible	1.2	1.2	1.0	0.9
Information not available	2.7	2.4	3.1	1.6
Grade 8				
Eligible	1.6	1.6	1.1	---
Not eligible	1.0	1.0	1.3	0.6
Information not available	2.6	1.8	2.2	0.7
Grade 12				
Eligible	2.0	1.8	1.1	0.4
Not eligible	0.9	0.9	1.2	0.5
Information not available	1.7	1.5	1.9	0.9

Standard error estimate cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B3.7

Standard errors for percentage of students at or above reading achievement levels by type of school: 1992, 1994, and 1998

	1992				1994				1998			
	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced	Below Basic	At or above Basic	At or above Proficient	Advanced
	Grade 4				Grade 4				Grade 4			
Public	1.1	1.1	1.3	0.6	1.1	1.1	1.2	0.7	1.0	1.0	0.9	0.5
Nonpublic	1.9	1.9	2.4	1.3	2.4	2.4	3.0	1.8	2.6	2.6	2.9	1.5
Nonpublic: Catholic	2.7	2.7	2.7	1.5	3.2	3.2	3.9	2.2	2.9	2.9	3.3	1.7
Other nonpublic	2.7	2.7	4.4	2.9	4.2	4.2	4.0	2.9	4.6	4.6	5.0	2.9
	Grade 8				Grade 8				Grade 8			
Public	1.1	1.1	1.1	0.3	0.9	0.9	0.9	0.3	0.9	0.9	0.9	0.4
Nonpublic	1.5	1.5	3.2	1.3	1.3	1.3	2.3	0.8	1.8	1.8	2.4	0.8
Nonpublic: Catholic	1.6	1.6	2.8	1.0	1.3	1.3	2.1	1.1	1.2	1.2	2.6	1.1
Other nonpublic	2.5	2.5	4.4	2.6	2.1	2.1	3.9	1.4	4.0	4.0	5.0	1.2
	Grade 12				Grade 12				Grade 12			
Public	0.7	0.7	0.9	0.3	0.7	0.7	1.0	0.5	1.0	1.0	1.1	0.4
Nonpublic	0.8	0.8	2.2	0.7	1.7	1.7	2.7	0.9	1.8	1.8	2.4	0.9
Nonpublic: Catholic	0.9	0.9	2.6	0.7	2.2	2.2	3.7	1.1	2.0	2.0	2.8	1.3
Other nonpublic	2.2	2.2	3.8	1.8	2.0	2.0	3.1	1.5	4.3	4.3	6.0	2.2

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Figure B3.7

Standard errors for percentage of students within each reading achievement level range by type of school: 1998

	1998			
	Below Basic	At Basic	At Proficient	At Advanced
Grade 4				
Public	1.0	0.8	0.8	0.5
Nonpublic	2.6	2.1	2.1	1.5
Nonpublic: Catholic	2.9	2.5	2.5	1.7
Other nonpublic	4.6	3.0	3.6	2.9
Grade 8				
Public	0.9	0.7	0.8	0.4
Nonpublic	1.8	1.8	2.2	0.8
Nonpublic: Catholic	1.2	2.4	2.2	1.1
Other nonpublic	4.0	2.4	4.7	1.2
Grade 12				
Public	1.0	0.9	1.1	0.4
Nonpublic	1.8	1.5	2.1	0.9
Nonpublic: Catholic	2.0	1.6	2.4	1.3
Other nonpublic	4.3	3.8	5.1	2.2

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B4.1

Standard errors for students' reports on the number of pages read each day in school and for homework: 1992, 1994, and 1998

Pages read for school and homework	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
11 or more pages									
Percentage	1.2	1.1	1.1	0.7	1.0	0.8	0.9	1.1	0.9
Scale score	1.1	1.3	0.8	1.2	1.2	0.9	0.8	1.0	0.7
Percentage at or above Proficient	1.6	1.5	1.0	1.9	1.5	1.4	1.2	1.7	1.2
6 to 10 pages									
Percentage	0.7	0.7	0.6	0.6	0.5	0.6	0.4	0.6	0.4
Scale score	1.3	1.3	1.3	1.0	1.0	1.1	0.9	1.1	1.0
Percentage at or above Proficient	1.9	1.6	1.5	1.6	1.2	1.5	1.3	1.5	1.6
5 or fewer pages									
Percentage	1.0	0.8	0.8	0.7	1.0	0.7	0.7	0.8	0.7
Scale score	1.4	1.2	1.3	1.4	1.1	1.1	0.8	0.9	1.2
Percentage at or above Proficient	1.5	1.4	1.3	1.4	1.3	1.1	1.3	1.1	1.3

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.1

Standard errors for percentage of students who reported reading "11 or more pages" each day for school and for homework: 1992, 1994, and 1998

	1992	1994	1998
Grade 4	1.2	1.1	1.1
Grade 8	0.7	1.0	0.8
Grade 12	0.9	1.1	0.9

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B4.2

Standard errors for students' reports on how frequently teachers ask them to explain their understanding and discuss various interpretations of what they read in school: 1992, 1994, and 1998

	Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998
Explain your understanding of what you have read						
Almost every day						
Percentage	0.5	0.7	0.7	0.8	0.9	0.7
Scale score	1.3	1.3	1.1	1.0	1.2	0.9
Percentage at or above Proficient	1.6	1.8	1.4	1.3	1.7	1.6
Once or twice a week						
Percentage	0.7	0.7	0.7	0.6	0.6	0.6
Scale score	1.3	1.0	0.9	0.6	1.0	0.9
Percentage at or above Proficient	1.5	1.5	1.2	1.1	1.7	1.2
Less than weekly						
Percentage	0.7	1.0	0.8	0.7	0.8	0.7
Scale score	1.2	1.1	0.9	0.9	1.1	1.1
Percentage at or above Proficient	1.3	1.0	1.1	1.3	1.5	1.3
Discuss interpretations of what you have read						
Almost every day						
Percentage	0.5	0.7	0.5	0.8	0.9	0.7
Scale score	1.5	1.6	1.1	0.9	1.4	0.9
Percentage at or above Proficient	1.7	1.9	1.7	1.2	2.1	1.3
Once or twice a week						
Percentage	0.6	0.7	0.6	0.6	0.5	0.5
Scale score	1.0	1.0	1.0	0.8	0.9	0.8
Percentage at or above Proficient	1.2	1.9	1.4	1.4	1.4	1.1
Less than weekly						
Percentage	0.7	0.9	0.8	0.9	0.9	0.7
Scale score	1.2	0.9	0.8	0.9	0.9	0.9
Percentage at or above Proficient	1.5	1.1	1.1	1.2	1.2	1.2

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.2a

Standard errors for percentage of students who reported being asked to explain their understanding of what they read "At least once a week": 1992, 1994, and 1998

	1992	1994	1998
Grade 8	0.7	1.0	0.8
Grade 12	0.7	0.8	0.7

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.2b

Standard errors for percentage of students who reported being asked to discuss interpretations of what they read "At least once a week": 1992, 1994, and 1998

	1992	1994	1998
Grade 8	0.7	0.9	0.8
Grade 12	0.9	0.9	0.7

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table B4.3

Standard errors for students' reports on the frequency with which they write long answers to questions on tests or assignments that involved reading: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
At least once a week									
Percentage	1.0	0.8	0.8	0.8	0.9	0.8	0.9	0.9	0.8
Scale score	1.1	1.0	0.8	1.0	1.0	1.1	0.8	1.1	1.0
Percentage at or above Proficient	1.5	1.4	1.0	1.3	1.2	1.4	1.1	1.7	1.3
Once/twice a month									
Percentage	0.8	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.6
Scale score	1.2	1.4	1.0	1.1	0.9	0.7	0.8	0.9	1.0
Percentage at or above Proficient	1.9	1.6	1.3	1.4	1.2	1.1	1.1	1.2	1.3
Once/twice a year									
Percentage	0.5	0.5	0.5	0.5	0.6	0.4	0.5	0.5	0.5
Scale score	2.2	2.2	1.8	1.7	1.5	1.6	1.4	1.6	1.2
Percentage at or above Proficient	2.5	2.4	2.4	2.7	1.7	1.9	2.0	2.0	1.7
Never/hardly ever									
Percentage	0.5	0.4	0.4	0.4	0.4	0.2	0.4	0.2	0.2
Scale score	2.1	2.8	2.1	2.2	1.9	2.7	2.6	2.4	2.6
Percentage at or above Proficient	2.0	2.5	1.9	2.1	1.8	2.6	2.7	2.0	2.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.3

Standard errors for percentage of students who reported writing long answers to questions on tests or assignments that involved reading "At least once a week": 1992, 1994, and 1998

	1992	1994	1998
Grade 4	1.0	0.8	0.8
Grade 8	0.8	0.9	0.8
Grade 12	0.9	0.9	0.8

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B4.4

Standard errors for students' reports on the frequency with which their teachers give them time to read books of their own choosing: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Almost every day									
Percentage	1.3	1.1	0.9	0.9	1.2	1.2	0.3	0.4	0.6
Scale score	1.1	1.0	0.8	1.4	1.2	1.0	2.4	2.5	2.3
Percentage at or above Proficient	1.5	1.3	1.1	1.8	1.5	1.5	2.8	2.3	3.4
Once/twice a week									
Percentage	1.0	0.8	0.7	1.0	1.1	1.1	0.4	0.6	0.5
Scale score	1.5	1.5	1.1	1.3	1.2	1.0	1.5	1.6	2.1
Percentage at or above Proficient	1.9	1.7	1.5	1.3	1.7	1.4	1.9	2.3	2.4
Less than weekly									
Percentage	0.8	0.7	0.7	1.3	1.8	1.4	0.5	0.8	0.8
Scale score	1.4	2.0	2.1	1.2	1.1	1.0	0.6	0.8	0.7
Percentage at or above Proficient	2.1	2.2	1.9	1.5	1.2	1.3	0.9	1.1	0.9

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.4

Standard errors for percentage of students who reported being given time to read books of their own choosing "Almost every day": 1992, 1994, and 1998

	1992	1994	1998
Grade 4	1.3	1.1	0.9
Grade 8	0.9	1.2	1.2
Grade 12	0.3	0.4	0.6

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table B4.5

Standard errors for students' reports on the frequency with which they discuss their studies at home and talk about their reading with family or friends: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
Discuss studies at home	**1992**	**1994**	**1998**	**1992**	**1994**	**1998**	**1992**	**1994**	**1998**
Almost every day									
Percentage	0.8	0.8	0.6	0.7	0.8	0.6	0.5	0.6	0.5
Scale score	1.0	1.0	0.8	1.0	0.9	1.0	0.9	1.0	1.0
Percentage at or above Proficient	1.4	1.2	1.3	1.6	1.3	1.5	1.5	1.6	1.4
Once/twice a week									
Percentage	0.7	0.5	0.6	0.4	0.6	0.6	0.5	0.6	0.6
Scale score	1.5	1.7	1.3	1.0	0.9	1.0	0.7	1.1	0.9
Percentage at or above Proficient	2.0	1.7	1.6	1.1	1.4	1.3	1.3	1.5	1.3
Once/twice a month									
Percentage	0.3	0.4	0.3	0.4	0.5	0.4	0.4	0.4	0.4
Scale score	1.8	2.3	2.2	2.0	2.2	1.3	1.0	1.0	1.2
Percentage at or above Proficient	3.7	3.3	2.7	2.4	2.6	1.7	2.0	1.6	1.8
Never/hardly ever									
Percentage	0.6	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.5
Scale score	1.5	1.7	1.3	1.4	1.2	1.2	1.1	1.1	1.3
Percentage at or above Proficient	1.4	1.2	1.5	1.4	1.1	1.2	1.4	1.4	1.4
Talk about reading with family and friends									
Almost every day									
Percentage	0.6	0.6	0.5	0.6	0.4	0.3	0.5	0.4	0.5
Scale score	1.4	1.3	1.2	1.3	1.6	1.6	1.1	1.3	1.2
Percentage at or above Proficient	1.8	1.5	1.4	2.0	2.3	2.0	1.9	1.6	1.7
Once/twice a week									
Percentage	0.9	0.6	0.7	0.5	0.6	0.6	0.5	0.6	0.5
Scale score	1.1	1.2	1.0	1.1	1.0	1.1	0.7	1.0	0.9
Percentage at or above Proficient	1.9	1.7	1.5	1.7	1.5	1.6	1.1	1.5	1.4
Once/twice a month									
Percentage	0.6	0.5	0.5	0.4	0.6	0.5	0.5	0.6	0.5
Scale score	1.6	2.1	1.5	1.2	1.2	0.8	0.8	0.8	1.0
Percentage at or above Proficient	2.0	2.2	2.1	1.7	1.6	1.4	1.3	1.4	1.6
Never/hardly ever									
Percentage	0.8	0.6	0.7	0.7	0.6	0.7	0.4	0.6	0.4
Scale score	1.4	1.6	1.3	1.2	0.9	1.0	1.0	1.1	1.2
Percentage at or above Proficient	1.8	1.7	1.7	1.1	0.9	1.0	1.3	1.2	1.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.5a

Standard errors for percentage of students who reported discussing their studies at home "Almost every day": 1992, 1994, and 1998

	1992	1994	1998
Grade 4	0.8	0.8	0.6
Grade 8	0.7	0.8	0.6
Grade 12	0.5	0.6	0.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.5b

Standard errors for percentage of students who reported talking about their reading with family or friends "Almost every day": 1992, 1994, and 1998

	1992	1994	1998
Grade 4	0.6	0.6	0.5
Grade 8	0.6	0.4	0.3
Grade 12	0.5	0.4	0.5

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table B4.6:

THE NATION'S REPORT CARD naep

Standard errors for students' reports on the amount of time spent watching television each day: 1992, 1994, and 1998

	Grade 4			Grade 8			Grade 12		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Six hours or more									
Percentage	0.7	0.7	0.6	0.5	0.5	0.4	0.3	0.3	0.3
Scale score	1.5	1.4	1.5	1.6	1.4	1.2	1.7	1.7	2.5
Percentage at or above Proficient	1.5	1.2	1.1	1.7	1.0	1.4	2.2	2.2	1.8
Four to five hours									
Percentage	0.8	0.7	0.7	0.5	0.6	0.5	0.4	0.6	0.4
Scale score	1.3	1.7	1.4	1.2	1.0	1.1	0.9	1.1	1.1
Percentage at or above Proficient	1.5	1.9	1.8	1.2	1.2	1.3	1.2	1.3	1.4
Two to three hours									
Percentage	0.8	0.7	0.9	0.5	0.8	0.6	0.6	0.6	0.6
Scale score	1.0	1.1	0.9	1.1	1.0	0.9	0.7	0.7	0.8
Percentage at or above Proficient	1.6	1.4	1.2	1.5	1.4	1.2	1.0	1.1	1.2
One hour or less									
Percentage	0.8	0.7	0.7	0.5	0.4	0.6	0.8	0.5	0.7
Scale score	1.6	1.9	1.3	1.5	1.7	1.8	1.0	1.0	1.0
Percentage at or above Proficient	2.2	2.2	1.8	2.3	2.2	2.2	1.6	1.7	1.4

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Figure B4.6:

THE NATION'S REPORT CARD naep

Standard errors for percentage of students who reported watching "One hour or less" of television each day: 1992, 1994, and 1998

	1992	1994	1998
Grade 4	0.8	0.7	0.7
Grade 8	0.5	0.4	0.6
Grade 12	0.8	0.5	0.7

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B5.11

Standard errors for average grade 4 scale scores for the states for public schools only: 1992, 1994, and 1998

	1992	1994	1998
Nation	1.0	1.1	0.8
States			
Alabama	1.7	1.5	1.8
Arizona	1.2	1.9	2.0
Arkansas	1.2	1.7	1.5
California †	2.0	1.8	3.2
Colorado	1.1	1.3	1.3
Connecticut	1.3	1.6	1.9
Delaware	0.6	1.1	1.3
Florida	1.2	1.7	1.5
Georgia	1.5	2.4	1.6
Hawaii	1.7	1.7	1.8
Iowa †	1.1	1.3	1.2
Kansas †	—	—	1.5
Kentucky	1.3	1.6	1.5
Louisiana	1.2	1.3	1.5
Maine	1.1	1.3	1.2
Maryland	1.6	1.5	1.6
Massachusetts †	0.9	1.3	1.4
Michigan	1.5	—	1.7
Minnesota †	1.2	1.4	1.5
Mississippi	1.3	1.6	1.5
Missouri	1.2	1.5	1.7
Montana †	—	1.4	1.7
Nevada	—	—	1.4
New Hampshire †	1.2	1.5	1.3
New Mexico	1.5	1.7	2.0
New York †	1.4	1.4	1.6
North Carolina	1.1	1.5	1.3
Oklahoma	0.9	—	1.1
Oregon	—	—	1.6
Rhode Island	1.8	1.3	1.7
South Carolina	1.3	1.4	1.3
Tennessee	1.4	1.7	1.5
Texas	1.6	1.9	2.1
Utah	1.1	1.3	1.3
Virginia	1.4	1.5	1.3
Washington	—	1.5	1.3
West Virginia	1.3	1.1	1.5
Wisconsin †	1.0	1.1	1.2
Wyoming	1.1	1.2	1.6
Other Jurisdictions			
District of Columbia	0.8	0.9	1.4
DDESS	—	—	1.3
DoDDS	—	0.9	1.1
Virgin Islands	1.7	—	1.9

— Indicates jurisdiction did not participate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B5.2

Standard errors for average grade 8 scale scores for the states for public schools only: 1998

	1998
Nation	0.8
States	
Alabama	1.4
Arizona	1.2
Arkansas	1.3
California[1]	1.7
Colorado	1.1
Connecticut	1.1
Delaware	1.3
Florida	1.7
Georgia	1.4
Hawaii	1.3
Kansas[1]	1.2
Kentucky	1.3
Louisiana	1.5
Maine	1.2
Maryland[1]	1.8
Massachusetts	1.6
Minnesota[1]	1.3
Mississippi	1.4
Missouri	1.3
Montana[1]	1.1
Nevada	1.1
New Mexico	1.2
New York[1]	1.6
North Carolina	1.1
Oklahoma	1.3
Oregon	1.5
Rhode Island	1.0
South Carolina	1.3
Tennessee	1.3
Texas	1.5
Utah	1.1
Virginia	1.1
Washington	1.3
West Virginia	1.2
Wisconsin[1]	1.6
Wyoming	1.3
Other Jurisdictions	
District of Columbia	2.0
DDESS	3.3
DoDDS	1.0
Virgin Islands	2.9

[1] Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B5.3

Standard errors for percentage of grade 4 students at or above the Proficient level for public schools only: 1992, 1994, and 1998

	1992	1994	1998
Nation	1.3	1.2	0.9
States			
Alabama	1.5	1.3	1.8
Arizona	1.2	1.5	1.4
Arkansas	1.2	1.4	1.5
California†	1.7	1.3	1.9
Colorado	1.4	1.5	1.8
Connecticut	1.4	1.6	2.5
Delaware	1.1	1.1	1.2
Florida	1.1	1.5	1.2
Georgia	1.5	2.0	1.9
Hawaii	1.5	1.4	1.0
Iowa†	1.6	1.5	1.6
Kansas†	—	—	1.7
Kentucky	1.6	1.9	1.7
Louisiana	1.1	1.2	1.3
Maine	1.7	1.5	1.6
Maryland	1.2	1.4	1.8
Massachusetts†	1.5	1.7	1.8
Michigan	2.0	—	1.5
Minnesota†	1.5	1.4	1.7
Mississippi	0.9	1.3	1.2
Missouri	1.5	1.6	1.5
Montana†	—	1.5	2.2
Nevada	—	—	1.3
New Hampshire†	1.6	1.6	1.8
New Mexico	1.7	1.5	1.4
New York†	1.3	1.5	1.7
North Carolina	1.3	1.7	1.4
Oklahoma	1.3	—	1.3
Oregon	—	—	1.5
Rhode Island	1.7	1.4	1.6
South Carolina	1.4	1.3	1.2
Tennessee	1.5	1.5	1.4
Texas	1.8	1.8	2.1
Utah	1.6	1.6	1.6
Virginia	1.6	1.7	1.6
Washington	—	1.2	1.4
West Virginia	1.4	1.4	1.6
Wisconsin†	1.3	1.6	1.5
Wyoming	1.5	1.4	1.9
Other Jurisdictions			
District of Columbia	0.6	0.7	1.1
DDESS	—	—	1.8
DoDDS	—	1.1	1.3
Virgin Islands	0.6	—	1.2

— Indicates jurisdiction did not participate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table B5.4

Standard errors for percentage of grade 8 students at or above the Proficient level for public schools only: 1998

	1998
Nation	0.9
States	
Alabama	1.5
Arizona	1.4
Arkansas	1.3
California †	1.7
Colorado	1.5
Connecticut	1.5
Delaware	1.5
Florida	1.6
Georgia	1.6
Hawaii	0.9
Kansas †	1.4
Kentucky	1.8
Louisiana	1.4
Maine	1.7
Maryland †	2.0
Massachusetts	2.1
Minnesota †	1.9
Mississippi	1.1
Missouri	1.5
Montana †	1.4
Nevada	1.2
New Mexico	1.4
New York †	2.3
North Carolina	1.5
Oklahoma	1.6
Oregon	2.0
Rhode Island	1.1
South Carolina	1.1
Tennessee	1.6
Texas	1.9
Utah	1.2
Virginia	1.6
Washington	1.6
West Virginia	1.2
Wisconsin †	2.1
Wyoming	1.6
Other Jurisdictions	
District of Columbia	1.2
DDESS	3.7
DoDDS	2.0
Virgin Islands	2.6

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B5.5

Standard errors for average grade 4 scale scores and percentage of students at or above the Proficient level by gender for public schools only: 1998

	Male		Female	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	1.2	1.3	0.8	1.1
States				
Alabama	1.8	1.8	2.1	2.8
Arizona	2.2	1.8	2.3	1.9
Arkansas	1.8	1.9	1.7	1.7
California†	3.6	2.3	3.3	2.1
Colorado	1.7	2.0	1.5	2.1
Connecticut	2.0	2.7	2.0	2.9
Delaware	1.5	1.5	1.9	2.1
Florida	1.9	1.3	1.7	1.6
Georgia	1.9	2.1	1.7	2.0
Hawaii	2.5	1.3	1.8	1.5
Iowa†	1.5	1.9	1.4	2.1
Kansas†	1.6	2.0	1.6	2.4
Kentucky	1.8	2.0	1.6	2.2
Louisiana	1.8	1.6	1.6	1.9
Maine	1.4	2.4	1.5	2.3
Maryland	2.0	2.1	1.6	2.2
Massachusetts†	1.6	2.2	1.7	2.4
Michigan	1.9	1.7	1.8	2.3
Minnesota†	1.9	1.9	1.5	2.2
Mississippi	1.8	1.1	1.5	1.8
Missouri	2.0	1.7	1.6	2.1
Montana†	2.0	3.5	2.7	4.2
Nevada	1.6	1.7	1.9	2.1
New Hampshire†	1.8	2.3	1.5	2.2
New Mexico	2.0	1.8	2.6	1.7
New York†	1.7	1.9	2.0	2.2
North Carolina	1.7	1.6	1.7	2.0
Oklahoma	1.2	2.2	1.5	2.2
Oregon	1.8	1.6	1.9	1.9
Rhode Island	2.3	2.7	2.3	2.3
South Carolina	1.5	1.7	1.6	1.6
Tennessee	1.7	1.6	1.8	1.7
Texas	2.3	2.3	2.1	2.4
Utah	1.8	2.1	1.5	2.1
Virginia	1.8	2.1	1.4	1.8
Washington	1.5	1.7	1.6	1.8
West Virginia	1.8	2.0	1.8	2.2
Wisconsin†	1.8	2.2	1.3	2.2
Wyoming	2.0	2.1	1.8	2.6
Other Jurisdictions				
District of Columbia	1.8	1.1	2.1	1.7
DDESS	1.5	2.3	1.5	1.6
DoDDS	1.4	1.9	1.3	1.7
Virgin Islands	5.0	1.7	2.1	1.6

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B5.6

Standard errors for average grade 8 scale scores and percentage of students at or above the Proficient level by gender for public schools only: 1998

	Male		Female	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	1.0	1.0	1.0	1.3
States				
Alabama	1.5	1.6	1.4	1.8
Arizona	1.5	2.2	1.3	1.8
Arkansas	1.7	2.1	1.6	2.0
California †	1.7	2.1	2.1	1.9
Colorado	1.2	1.6	1.4	1.9
Connecticut	1.4	1.9	1.3	1.9
Delaware	1.9	2.5	1.6	1.9
Florida	2.1	1.9	1.8	2.1
Georgia	1.7	1.8	1.5	2.0
Hawaii	1.7	1.6	1.4	1.3
Kansas †	1.4	2.1	1.5	2.2
Kentucky	1.9	2.1	1.5	2.4
Louisiana	2.0	1.6	1.3	1.7
Maine	1.7	2.1	1.5	2.5
Maryland †	2.1	2.1	2.0	2.3
Massachusetts	1.9	2.4	1.7	2.5
Minnesota †	1.6	2.2	1.4	2.3
Mississippi	1.9	1.2	1.4	1.7
Missouri	1.7	1.8	1.2	1.7
Montana †	1.7	2.4	1.7	2.3
Nevada	1.4	1.4	1.4	1.8
New Mexico	1.5	1.9	1.5	2.3
New York †	1.7	2.5	1.7	2.5
North Carolina	1.5	2.1	1.2	1.9
Oklahoma	1.8	2.7	1.3	2.4
Oregon	1.8	1.9	1.5	2.5
Rhode Island	1.7	1.8	1.1	1.7
South Carolina	1.6	1.5	1.5	1.5
Tennessee	1.6	1.7	1.5	2.1
Texas	1.6	1.8	1.7	2.5
Utah	1.2	1.3	1.2	1.7
Virginia	1.3	1.9	1.4	1.9
Washington	1.6	2.1	1.4	2.3
West Virginia	1.8	1.6	1.1	1.8
Wisconsin †	1.9	2.2	1.6	2.6
Wyoming	1.5	1.4	1.7	2.7
Other Jurisdictions				
District of Columbia	3.1	1.8	2.1	2.2
DDESS	5.7	5.5	3.3	4.7
DoDDS	1.5	2.4	1.3	3.0
Virgin Islands	3.2	2.8	3.4	2.9

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B5.7

Standard errors for average grade 4 scale scores and percentage of students at or above the Proficient level by race/ethnicity for public schools only: 1998

	White		Black		Hispanic		Asian/Pacific Isl.		American Indian	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	0.9	1.2	1.8	1.0	1.9	1.3	2.8	4.4	3.2	3.8
States										
Alabama	2.0	2.6	2.0	1.5	4.5	3.0	***	***	***	***
Arizona	1.4	2.1	3.8	3.3	3.7	1.1	***	***	4.3	3.8
Arkansas	1.3	1.9	2.4	1.4	5.3	3.5	***	***	***	***
California †	2.6	2.9	4.6	2.2	5.2	1.6	5.1	4.1	***	***
Colorado	1.3	2.1	4.4	4.1	2.1	2.1	6.8	8.5	***	***
Connecticut	1.7	2.5	3.1	2.9	3.9	2.6	4.3	8.8	***	***
Delaware	1.5	1.9	1.9	2.1	3.8	2.8	***	***	***	***
Florida	1.8	1.7	2.2	1.4	3.0	2.6	***	***	***	***
Georgia	2.0	3.0	2.0	1.3	4.2	3.3	***	***	***	***
Hawaii	2.3	2.2	4.6	3.6	3.5	2.3	2.3	1.4	5.6	3.9
Iowa †	1.2	1.8	4.1	2.5	2.7	5.3	***	***	***	***
Kansas †	1.5	2.3	3.7	2.7	3.7	3.9	***	***	5.3	5.4
Kentucky	1.5	1.7	3.0	2.7	5.1	4.4	***	***	***	***
Louisiana	1.3	2.3	2.0	1.0	4.1	3.5	***	***	***	***
Maine	1.2	1.7	***	***	6.2	7.6	***	***	***	***
Maryland	1.7	2.7	2.4	1.4	4.1	4.3	5.4	7.9	***	***
Massachusetts †	1.3	2.3	3.2	4.0	3.3	3.2	5.5	6.1	***	***
Michigan	1.3	1.7	3.9	2.3	4.8	2.6	***	***	***	***
Minnesota †	1.5	1.9	4.7	3.0	5.6	3.8	10.1	9.4	***	***
Mississippi	1.8	1.6	1.9	1.4	3.4	2.5	***	***	***	***
Missouri	1.4	1.7	3.6	2.1	4.5	3.2	***	***	***	***
Montana †	1.6	2.5	***	***	6.2	5.5	***	***	3.9	4.7
Nevada	1.4	1.8	3.1	1.9	2.0	1.8	3.6	6.1	5.8	4.5
New Hampshire †	1.3	1.7	***	***	5.2	5.2	***	***	***	***
New Mexico	1.8	2.4	7.1	3.6	1.7	1.4	***	***	8.6	2.5
New York †	1.2	1.8	2.8	1.9	2.8	1.9	5.2	10.0	***	***
North Carolina	1.4	1.8	2.0	1.6	3.2	3.2	***	***	***	***
Oklahoma	1.1	2.0	5.0	2.6	2.5	2.5	***	***	2.4	3.6
Oregon	1.6	1.6	5.2	4.8	3.4	2.1	5.3	5.5	4.1	4.2
Rhode Island	1.4	1.8	3.6	2.4	5.1	2.0	6.4	5.9	***	***
South Carolina	1.5	1.8	1.7	1.5	3.9	3.0	***	***	***	***
Tennessee	1.6	1.6	2.4	2.0	6.1	3.9	***	***	***	***
Texas	1.9	3.0	3.5	2.0	2.7	1.4	***	***	***	***
Utah	1.2	1.6	***	***	3.0	2.4	6.5	5.8	7.2	6.2
Virginia	1.5	2.2	1.8	2.0	4.2	3.6	4.3	6.7	***	***
Washington	1.4	1.7	4.4	4.6	3.4	2.9	3.2	4.4	4.5	3.6
West Virginia	1.4	1.7	3.0	2.5	5.1	3.5	***	***	***	***
Wisconsin †	1.1	1.8	2.5	2.4	2.7	3.4	***	***	***	***
Wyoming	1.9	2.2	***	***	3.2	2.8	***	***	6.9	4.1
Other Jurisdictions										
District of Columbia	5.9	5.7	1.6	1.3	4.3	1.7	***	***	***	***
DDESS	2.3	2.0	1.9	2.0	3.6	3.9	6.6	7.8	***	***
DoDDS	1.5	2.3	3.6	4.8	4.2	3.9	2.8	3.4	3.9	5.7
Virgin Islands	***	***	2.0	1.5	4.1	1.7	***	***	***	***

*** Standard error estimates cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools

DoDDS: Department of Defense Dependents Schools (Overseas)

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table B5.8

Standard errors for average grade 8 scale scores and percentage of students at or above the Proficient level by race/ethnicity for public schools only: 1998

	White		Black		Hispanic		Asian/Pacific Islander		American Indian	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	0.9	1.2	1.6	1.3	2.1	1.3	4.0	5.3	4.8	5.9
States										
Alabama	1.4	1.8	1.8	1.4	5.7	5.0	***	***	***	***
Arizona	1.1	1.8	3.3	4.0	1.5	1.5	***	***	4.3	4.1
Arkansas	1.4	1.6	2.1	1.6	5.8	4.9	***	***	***	***
California †	1.9	3.1	3.6	3.6	2.0	1.4	3.2	4.3	***	***
Colorado	1.0	1.9	3.8	2.8	2.0	1.8	4.5	6.1	***	***
Connecticut	1.0	1.6	2.7	2.6	2.3	3.2	4.4	6.9	***	***
Delaware	1.3	2.2	2.6	2.1	5.9	4.4	***	***	***	***
Florida	1.6	2.4	2.3	1.4	3.6	2.1	3.7	7.2	***	***
Georgia	1.7	2.5	1.8	1.2	3.5	4.2	***	***	***	***
Hawaii	2.2	3.5	8.3	6.4	3.0	3.0	1.2	1.0	***	***
Kansas †	1.1	2.0	7.7	9.1	5.2	5.6	***	***	***	***
Kentucky	1.2	1.8	4.6	3.0	***	***	***	***	***	***
Louisiana	1.4	2.0	1.9	1.4	6.6	3.5	***	***	***	***
Maine	1.2	1.9	***	***	***	***	***	***	***	***
Maryland †	2.1	2.6	1.8	1.6	4.1	4.4	4.1	6.9	***	***
Massachusetts	1.5	2.4	3.4	4.0	3.3	3.1	5.7	7.2	***	***
Minnesota †	1.1	2.0	4.8	4.4	5.4	5.6	5.5	6.2	***	***
Mississippi	1.2	2.0	1.8	1.1	6.4	2.7	***	***	***	***
Missouri	1.3	1.6	2.7	2.2	***	***	***	***	***	***
Montana †	1.1	1.6	***	***	6.2	7.2	***	***	4.7	4.2
Nevada	1.0	1.6	4.8	2.4	2.4	2.0	3.2	6.1	***	***
New Mexico	1.5	2.3	***	***	1.8	1.4	***	***	4.4	3.7
New York †	1.4	2.7	2.5	2.5	2.2	2.2	6.5	8.6	***	***
North Carolina	1.3	1.8	1.6	2.1	5.9	4.3	***	***	2.6	5.4
Oklahoma	1.3	2.1	2.7	3.5	2.7	3.8	***	***	2.5	4.4
Oregon	1.4	2.3	***	***	3.4	3.0	3.7	8.2	3.9	3.7
Rhode Island	0.8	1.5	4.8	5.4	4.1	2.2	4.3	4.8	***	***
South Carolina	1.1	1.5	2.0	1.2	4.6	4.1	***	***	***	***
Tennessee	1.3	1.9	2.3	1.5	5.6	4.2	***	***	***	***
Texas	1.6	2.4	3.1	3.5	2.1	1.9	4.2	5.1	***	***
Utah	1.0	1.2	***	***	3.8	4.4	5.3	7.1	***	***
Virginia	1.2	1.8	1.6	2.0	5.2	5.0	4.8	7.6	***	***
Washington	1.4	2.1	3.9	6.0	3.1	3.4	3.7	5.2	4.5	3.9
West Virginia	1.2	1.2	3.7	4.5	***	***	***	***	***	***
Wisconsin †	1.3	2.1	7.0	3.3	4.7	5.2	***	***	***	***
Wyoming	1.3	1.6	***	***	4.5	3.4	***	***	3.7	4.1
Other Jurisdictions										
District of Columbia	6.6	7.0	1.8	1.2	8.3	6.3	***	***	***	***
DDESS	3.1	3.7	6.7	5.9	4.5	6.9	***	***	***	***
DoDDS	2.0	4.0	2.0	2.4	2.6	3.0	2.7	4.1	***	***
Virgin Islands	***	***	4.2	3.1	6.0	3.4	***	***	***	***

*** Standard error estimates cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B5.9

Standard errors for average grade 4 scale scores and percentage of students at or above the Proficient level by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible		Not eligible	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	1.2	1.2	1.0	1.3
States				
Alabama	1.7	1.4	2.0	2.5
Arizona	3.3	1.1	1.9	2.4
Arkansas	1.9	1.5	1.6	2.3
California[1]	4.4	1.2	2.7	3.4
Colorado	2.0	2.8	1.3	2.0
Connecticut	2.3	1.9	1.9	2.7
Delaware	2.1	1.6	1.5	1.7
Florida	1.8	1.0	1.5	1.9
Georgia	2.0	1.1	2.0	3.1
Hawaii	2.4	1.0	1.4	1.3
Iowa[1]	1.8	1.8	1.2	1.9
Kansas[1]	2.7	2.4	1.5	2.2
Kentucky	1.7	1.9	1.5	2.1
Louisiana	1.8	1.2	1.8	2.9
Maine	2.0	2.6	1.2	1.8
Maryland	2.1	1.7	2.1	2.3
Massachusetts[1]	2.1	2.4	1.3	2.2
Michigan	2.6	1.9	1.3	1.8
Minnesota[1]	2.4	1.7	1.5	1.8
Mississippi	1.5	0.9	1.9	2.1
Missouri	2.7	1.9	1.7	2.1
Montana[1]	2.5	3.0	1.6	2.6
Nevada	1.9	1.1	1.4	1.8
New Hampshire[1]	2.7	2.5	1.3	2.1
New Mexico	2.5	1.3	2.8	2.6
New York[1]	1.9	1.4	1.3	2.0
North Carolina	1.7	1.4	1.4	1.9
Oklahoma	1.6	1.8	1.0	1.9
Oregon	2.4	1.6	1.4	1.6
Rhode Island	2.7	1.7	1.2	1.8
South Carolina	1.5	1.2	1.4	1.7
Tennessee	2.0	1.4	1.5	2.0
Texas	2.5	1.4	1.8	2.8
Utah	2.2	2.3	1.5	1.8
Virginia	1.8	1.9	1.5	2.2
Washington	2.1	1.7	1.3	1.8
West Virginia	1.5	1.7	1.6	2.2
Wisconsin	1.7	2.1	1.1	2.0
Wyoming	2.1	2.1	2.0	2.2
Other Jurisdictions				
District of Columbia	1.5	1.0	4.0	5.1
DDESS	1.9	2.9	2.8	2.7
DoDDS	5.0	6.7	2.5	3.9
Virgin Islands	2.1	1.5	***	***

*** Standard error cannot be accurately determined.

[1] Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table B5.10

Standard errors for average grade 8 scale scores and percentage of students at or above the Proficient level by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible		Not eligible	
	Average scale score	Percentage at or above Proficient	Average scale score	Percentage at or above Proficient
Nation	1.3	1.0	1.0	1.4
States				
Alabama	1.6	1.1	1.4	2.1
Arizona	1.5	1.7	1.4	2.0
Arkansas	1.7	1.7	1.4	1.5
California†	1.7	1.2	1.9	2.8
Colorado	2.7	1.9	1.0	1.9
Connecticut	2.4	2.5	1.1	1.7
Delaware	2.3	1.9	1.1	2.2
Florida	2.6	1.5	1.6	2.0
Georgia	2.0	1.5	1.6	2.4
Hawaii	2.0	1.3	1.3	1.5
Kansas†	2.3	2.5	1.0	1.9
Kentucky	1.6	1.9	1.5	2.3
Louisiana	2.0	1.1	1.6	2.5
Maine	2.1	3.2	1.2	2.0
Maryland†	2.2	1.6	1.8	2.4
Massachusetts	2.1	2.0	1.4	2.3
Minnesota†	2.7	2.8	1.3	2.0
Mississippi	1.6	1.1	1.4	2.0
Missouri	1.9	1.5	1.3	1.7
Montana†	1.8	2.4	1.2	2.1
Nevada	2.9	1.9	1.0	1.7
New Mexico	2.2	1.9	1.5	2.2
New York†	1.9	2.5	1.8	2.7
North Carolina	1.6	1.9	1.3	1.8
Oklahoma	1.6	2.0	1.5	2.2
Oregon	2.2	2.1	1.4	2.3
Rhode Island	2.2	1.7	0.9	1.5
South Carolina	2.1	1.4	1.0	1.5
Tennessee	1.8	2.3	1.5	2.2
Texas	2.1	1.5	1.5	2.5
Utah	2.4	3.0	1.2	1.4
Virginia	1.8	1.9	1.1	1.8
Washington	1.9	1.6	1.5	2.0
West Virginia	1.6	1.8	1.3	1.6
Wisconsin†	3.5	2.3	1.5	2.4
Wyoming	2.4	2.7	1.3	1.7
Other Jurisdictions				
District of Columbia	2.3	1.8	3.1	2.9
DDESS	5.6	5.9	2.5	3.1
DoDDS	5.8	7.2	2.6	5.2
Virgin Islands	3.8	2.8	***	***

*** Standard error cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

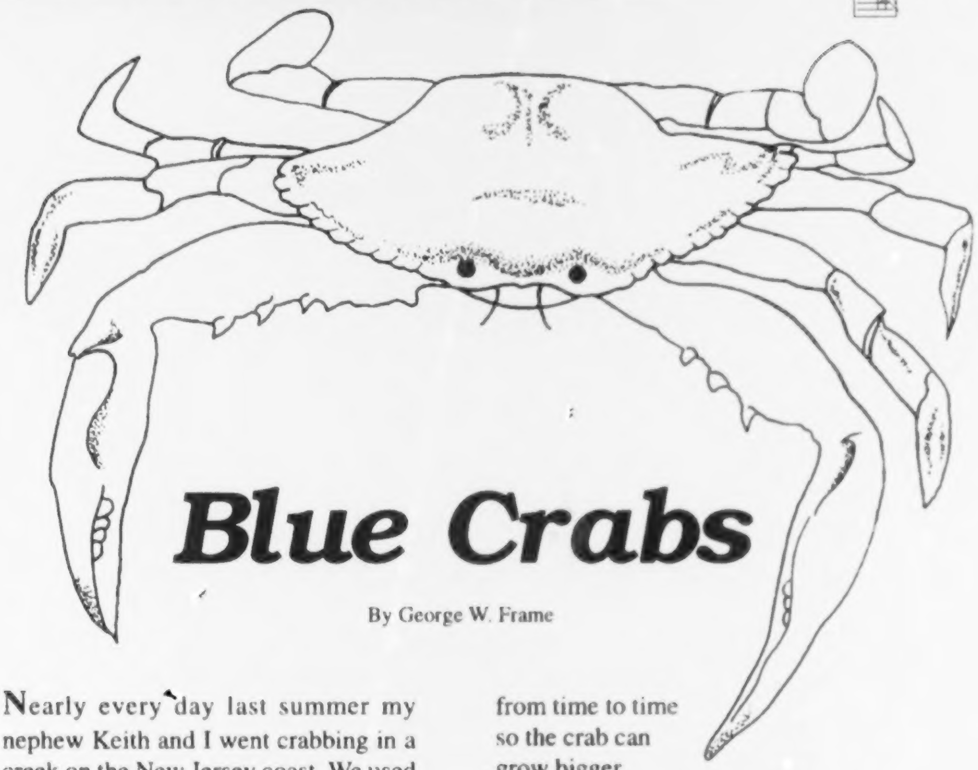
DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

APPENDIX C

Sample Texts and Questions from the NAEP 1998 Reading Assessment

This appendix presents the reading passages from the NAEP 1998 reading assessment that have been released for publication in this report. Also included here are additional sample questions and student responses to supplement those presented in Chapter 1 of this report. For each question, the reading purpose and reading stance being addressed is indicated. For multiple-choice questions, the correct answer is marked. For constructed-response questions, a summary of scoring criteria used to rate students is provided. The sample student responses have been reproduced from assessment test booklets to illustrate representative answers that demonstrated at least adequate comprehension. The rating assigned to each sample response is indicated.



Blue Crabs

By George W. Frame

Nearly every day last summer my nephew Keith and I went crabbing in a creek on the New Jersey coast. We used a wire trap baited with scraps of fish and meat. Each time a crab entered the trap to eat, we pulled the doors closed. We cooked and ate the crabs we caught.

Blue crabs are very strong. Their big claws can make a painful pinch. When cornered, the crabs boldly defend themselves. They wave their outstretched claws and are fast and ready to fight. Keith and I had to be very careful to avoid having our fingers pinched.

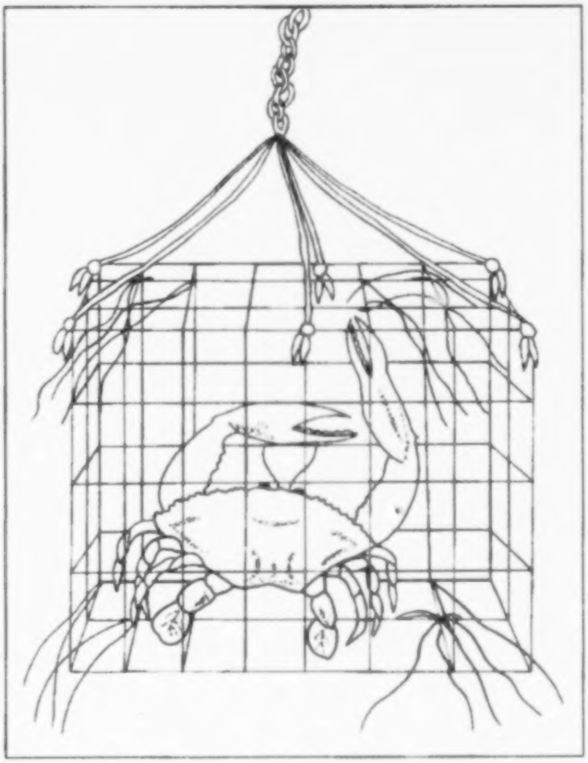
Crabs are **arthropods**, a very large group of animals that have an external skeleton and jointed legs. Other kinds of arthropods are insects, spiders, and centipedes. Blue crabs belong to a particular arthropod group called **crustaceans**. Crustaceans are abundant in the ocean, just as insects are on land.

The blue crab's hard shell is a strong armor. But the armor must be cast off from time to time so the crab can grow bigger. Getting rid of its shell is called **molting**.

Each blue crab molts about twenty times during its life. Just before molting, a new soft shell forms under the hard outer shell. Then the outer shell splits apart, and the crab backs out. This leaves the crab with a soft, wrinkled, outer covering. The body increases in size by absorbing water, stretching the soft shell to a much larger size. The crab hides for a few hours until its new shell has hardened.

Keith and I sometimes found these soft-shell crabs clinging to pilings and hiding beneath seaweed.

Blue crabs mate when the female undergoes her last molt and still has a soft shell. The male courts her by dancing from side to side while holding his claws outstretched. He then transfers



sperm to the female, where they are stored until egg laying begins several months later. The female blue crab mates only once but receives enough sperm to fertilize all the eggs that she will lay in her lifetime. Usually she lays eggs two or three times during the summer, and then she dies.

When the eggs are fertilized and laid, they become glued to long hairs on the underside of the female's abdomen. The egg mass sometimes looks like an orange-brown sponge and contains up to two million eggs. The female carries her eggs until they hatch—about nine to fourteen days later. Only one of the blue crabs that we caught last summer was carrying eggs, and we returned her to the water so her eggs could hatch. Most females with eggs stay in the deeper, saltier water at the ocean's edge rather than in the marshes.

The young blue crabs, and most other young crustaceans, hatch into larvae that look very different from their parents. The tiny blue crab babies are hardly bigger than a speck of dust. They are transparent and look like they are all head and tail. These larvae swim near the surface of the sea, and grow a new and bigger shell every few days. They soon change in shape so that they can either swim or crawl around on the bottom. Then they molt again and look like tiny adult crabs. After that their appearance does not change, but they continue to molt every twenty or thirty days as they grow.

As blue crabs become older, some move into shallower waters. The males in particular go into creeks and marshes, sometimes all the way to the freshwater streams and rivers. Keith and I caught ninety-two blue crabs in the shallow creek of the tide marsh last summer. Eighty-seven of those crabs were males, and only five were females.

Gulls find and eat many blue crabs. They easily catch crabs that hide in puddles at low tide. Other predators are raccoons, alligators, and people. If caught, the crabs sometimes drop off a leg or a claw to escape. Seven of the blue crabs that Keith and I caught were missing a claw.

Crabs are able to replace their lost limbs. If a leg or claw is seriously injured, the crab drops it off. The opening that is left near the body closes to prevent the loss of blood. Soon a new limb begins growing at the break. The next time the crab molts, the tiny limb's covering is cast off, too, and the crab then has a new and usable leg or claw. The new limb is smaller than the lost one. But by the time the crab molts two or three more times, the new leg or claw will be normal size.

Many fishermen catch crabs to sell. Most are caught in wire traps or with baited lines during the summer while the crabs are active. In the winter, the fishermen drag big nets through the mud for the dormant crabs. Commercial fishermen catch a lot of crabs, sometimes more than 50 million pounds in a year. And many other crabs are caught by weekend fishermen who crab for fun and food.

The blue crab has a scientific name, just like all other living things. Its name is *Callinectes sapidus*. In the Latin language *Callinectes* means "beautiful swimmer," and *sapidus* means "delicious." I think that scientists gave the blue crab a very appropriate name.

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Informative Article:

Blue Crabs

Questions:

What is the most interesting thing you learned from this passage about blue crabs?

Reading Purpose: To Gain Information **Reading Stance:** Personal Response

Responses to this question were scored
Unacceptable or Acceptable

	Overall percentage "Acceptable"	Percentage "Acceptable" within achievement level intervals Basic 208-237*	 Proficient 238-267*	 Advanced 268 and above*
Grade 4	82 (1.4)	87 (2.8)	93 (1.5)	95 (2.3)

* NAEP Reading composite scale range.
The standard errors of the estimated percentages appear in parentheses.

Responses scored Acceptable provided a specific detail about blue crabs that the respondent learned from reading the article.

Sample Acceptable Response:

that they can loose
a leg and grow it
back

BEST COPY AVAILABLE

Just after molting, how does a blue crab increase its size?

★**A.** Its body absorbs water.
B. It drops off its legs and grows new ones.
C. Its shell grows the way human bones do.
D. It eats large quantities of food.

Reading Purpose: To Gain Information **Reading Stance:** Developing an Interpretation

	Overall percentage correct	Percentage correct within achievement level intervals		
		Basic 203-237*	Proficient 238-267*	Advanced 268 and above*
Grade 4	53 (1.5)	52 (3.0)	72 (3.9)	86 (4.3)

* NAEP Reading composite scale range
The standard errors of the estimated percentages appear in parentheses

Describe the appearance of a female blue crab that is carrying eggs.

Reading Purpose: To Gain Information **Reading Stance:** Developing an Interpretation

Responses to this question were scored
Unacceptable or Acceptable

		Percentage "Acceptable" within achievement level intervals		
	Overall percentage "Acceptable"	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
Grade 4	33 (1.3)	29 (2.8)	54 (3.5)	79 (4.7)

* NAEP Reading composite scale range
The standard errors of the estimated percentages appear in parentheses.

Acceptable responses provided a description of a female blue crab that is carrying eggs based on specific information from the article.

Sample Acceptable Response:

The egg mass somtimes looks like a orange-brown sponge and carries up to 1 million eggs and the crab has pinchers.

BEST COPY AVAILABLE

According to the passage, what do blue crabs have in common with all other arthropods?

★ **A.** They have a skeleton on the outside of their bodies.
B. They hatch out af a shell-like pod.
C. They live in the shallow waters of North America.
D. They are delicious to eat.

Reading Purpose: To Gain Information **Reading Stance:** Developing an Interpretation

		Percentage correct within achievement level intervals		
	Overall percentage correct	Basic 208-237*	Proficient 238-267*	Advanced 268 and above*
Grade 4	57 (1.4)	57 (2.6)	76 (2.5)	90 (3.8)

* NAEP Reading composite scale range
The standard errors of the estimated percentages appear in parentheses.

Gary Soto

"A Fire in My Hands"

Gary Soto decided to become a poet in college after reading a bittersweet poem by Edward Field called "Unwanted." "It's about a lonely man who feels sad that no one wants him," Soto says. "He hangs a picture of himself at the post office next to the posters of dangerous criminals, hoping that people will recognize him and love him. I was inspired by this poem because it seemed to speak about my own life."

Later, Soto came upon a book of odes by Pablo Neruda, the Chilean poet who celebrated the beauty and value of common objects, such as socks, scissors, and watermelons. When Soto began writing poems himself, he focused on ordinary things from his childhood: his baseball mitt, dogs, and fruit. Here, for example, is a poem about young love in which an ordinary orange becomes "a fire in my hands," a symbol of love and growing self-confidence.

ORANGES

The first time I walked
With a girl, I was twelve,
Cold, and weighted down
With two oranges in my jacket.
December. Frost cracking
Beneath my steps, my breath
Before me, then gone,
As I walked toward
Her house, the one whose
Porch light burned yellow
Night and day, in any weather.
A dog barked at me, until
She came out pulling
At her gloves, face bright
with rouge. I smiled,
Touched her shoulder, and led
Her down the street, across
A used-car lot and a line
Of newly planted trees,
Until we were breathing
Before a drugstore. We
Entered, the tiny bell
Bringing a saleslady
Down a narrow aisle of goods.
I turned to the candies
Tiered like bleachers,
And asked what she wanted—
Light in her eyes, a smile
Starting at the corners
Of her mouth. I fingered
A nickel in my pocket,
And when she lifted a chocolate
That cost a dime,
I didn't say anything.
I took the nickel from
My pocket, then an orange,
And set them quietly on
The counter. When I looked up,
The lady's eyes met mine,
And held them, knowing
Very well what I was all
About.

Outside
A few cars hissing past,
Fog hanging like old
Coats between the trees.
I took my girl's hand
In mine for two blocks,
Then released it to let
Her unwrap the chocolate.
I peeled my orange
That was so bright against
The gray of December
That, from some distance,
Someone might have thought
I was making a fire in my hands.

In another poem, black hair symbolizes Soto's Mexican heritage, which in turn creates a bond between him and his baseball hero, Hector Moreno:

... When Hector lined balls into deep
Center, in my mind I rounded the bases
With him, my face flared, my hair lifting
Beautifully, because we were coming home
To the arms of brown people.

(from "Black Hair")

Soto's poems focus on places as well as objects. He explains, "I saw that our [American] poets often wrote about places where they grew up or places that impressed them deeply. James Wright wrote about Ohio and West Virginia, Philip Levine about Detroit, Gary Snyder about the Sierra Nevadas and about Japan, where for years he studied Zen Buddhism. I decided to write about the San Joaquin Valley, where my hometown, Fresno, is located. Some of my poems are stark observations of human violence — burglaries, muggings, fistfights — while others are spare images of nature — the orange groves and vineyards, the Kings River, the bogs, the Sequoias. I fell in love with the valley, both its ugliness and its beauty, and quietly wrote poems about it to share with others."

...And this morning
After the wind left
With its pile of clouds
The broken fence steamed, sunlight spread
Like seed from one field
To another, out of a bare sycamore
Sparrows lifted above the ridge...

(from "October")

Each poem comes from Soto's memory of a particular event. Using all five senses, he recreates the memory and expands on it with the imagination. "Narrative poems should be credible," he explains, "though they do not necessarily have to be completely 'true.' " In fact, some of Soto's best poems, like the one that follows, are inventions based on someone he's seen or met.

FINDING A LUCKY NUMBER

When I was like you I crossed a street
To a store, and from the store
Up an alley, as I rolled chocolate
In my mouth and looked around
With my face. The day was blue
Between trees, even without wind,
And the fences were steaming
And a dog was staring into a paint bucket
And a Mexicano was raking
Spilled garbage into a box,
A raffle of eggshells and orange peels.
He nodded his head and I nodded mine
And rolled chocolate all the way
To the courthouse, where I sat
In the park, with a leaf falling
For every person who passed —
Three leaves and three daughters
With bags in their hands.
I followed them under trees,
The leaves rocking out of reach
Like those skirts I would love
From a distance. I lost them
When I bent down to tie my shoes
And begged a squirrel to eat grass.
Looking up, a dog on the run,
A grandma with a cart,
And Italians clicking dominoes
At a picnic table — men
Of the Old World, in suits big enough
For Europe. I approached
Them like a squirrel, a tree
At a time, and when I was close
Enough to tell the hour from their wrists,
One laughed with hands in his hair
And turned to ask my age.
"Twelve," I said, and he knocked
My head softly with a knuckle:
"Lucky number, Sonny." He bared
His teeth, yellow and crooked
As dominoes, and tapped the front one
With a finger. "I got twelve — see."
He opened wide until his eyes were lost
In the pouches of fat cheeks,
And I, not knowing what to do, looked in.

Fifteen years ago, when he first started writing, Gary Soto had no idea that he would turn out so many poems. Yet poems feed into other poems, a process he compares to a needle passing a stitch through cloth. He already has five books of poetry to his credit as well as four collections of essays. A collection of short stories for Chicano children, *Baseball in April*, will be published in February, and a collection of autobiographical essays, *A Summer Life*, will come out in June.

In the writing classes he teaches at the University of California at Berkeley, Soto advises his students to look to their own lives for inspiration. "What are your life stories?" he asks. "Can you remember incidents from your childhood? Some of you will say that your lives are boring, that nothing has happened, that everything interesting happens far away. Not so. Your lives are at work, too. Each poet works differently. But the task is always the same — to get the language right so that the subject of the poem will live."

—Suzi Mee

Excerpt from "October" © 1977, in The Elements of San Joaquin, by Gary Soto. Reprinted by permission of the author. "Oranges," "Finding a Lucky Number," and excerpts from "Black Hair" from New and Selected Poems by Soto, Gary, © 1995, published by Chronicle Books, San Francisco. Website http://www.chronbooks.com. Literary Cavalcade, © 1990. Reprinted by permission.

Literary Article:

Gary Soto: A Fire in My Hands

Questions:

Explain what the lady at the counter in "Oranges" knew all about.

Reading Purpose: Literary Experience **Reading Stance:** Developing and Interpretation

Responses to this question were scored
Unsatisfactory, Partial, or Complete

		Percentage "Complete" within achievement level intervals		
	Overall percentage "Complete"	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
Grade 8	21 (0.9)	17 (1.6)	36 (2.7)	**

* NAEP Reading composite scale range.
**Sample size insufficient to permit reliable estimate.
The standard errors of the estimated percentages appear in parentheses.

Responses scored Complete provided an appropriate interpretation of the lady in the poem and used information from the poem in support of their interpretation.

Sample Complete Response:

She understood that the boy didn't
have enough money for the candy, but
he wanted to please his young
girl friend.

Explain how Soto's poem "October" differs from other poems included in the article.

Reading Purpose: Literary Experience **Reading Stance:** Critical Stance

Responses to this question were scored
Unsatisfactory, Partial, or Complete

	Overall percentage "Complete"	Percentage "Complete" within achievement level intervals		
		Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
Grade 8	24 (1.1)	17 (2.0)	40 (2.9)	**

* NAEP Reading composite scale range.
**Sample size insufficient to permit reliable estimate.
The standard errors of the estimated percentages appear in parentheses.

Responses scored Complete demonstrated a critical evaluation of the poems by citing that "October" is a descriptive poem in comparison to the other narrative poems contained in the article.

Sample Complete Response:

"October" is describing a place in a very different way. It isn't like a story of something he did. It's beautiful descriptive words of imagination

Explain the author's attitude toward Gary Soto and his poetry. Use examples and details from the article to support your ideas.

Reading Purpose: Literary Experience **Reading Stance:** Critical Stance

Responses to this question were scored
Unsatisfactory, Partial, or Complete

		Percentage "Complete" within achievement level intervals		
	Overall percentage "Complete"	Basic 243-280*	Proficient 281-322*	Advanced 323 and above*
Grade 8	16 (1.2)	11 (1.3)	25 (2.3)	**

* NAEP Reading composite scale range.
**Sample size insufficient to permit reliable estimate.
The standard errors of the estimated percentages appear in parentheses.

Complete responses evaluated the author's attitude towards Soto and provided support from the article.

Sample Complete Response:

I think the author enjoys his work because he saids, Gary Soto use his five senses and expands on imagination. He also shows that he thinks the poems are different but creative

Instructions for Form 1040EZ

Use this form if:

- Your filing status is single.
- You do not claim any dependents.
- You were under 65 and not blind.
- Your taxable income (line 5) is less than $50,000.
- You had **only** wages, salaries, tips, and taxable scholarships or fellowships, and your taxable interest income was $400 or less. ***Caution:*** *If you earned tips (including allocated tips) that are not included in Box 14 of your W-2, you may not be able to use Form 1040EZ. See page 23 in the booklet.*

If you are not sure about your filing status or dependents, see pages 15 through 20 in the booklet.

If you can't use this form, see pages 11 through 13 in the booklet for which form to use.

Completing your return Please print your numbers inside the boxes. Do not type your numbers. Do not use dollar signs. You may round off cents to whole dollars. To do so, drop amounts under 50 cents and increase amounts that are 50 cents or more. For example, $129.49 becomes $129 and $129.50 becomes $130. If you round off, do so for all amounts. But if you have to add two or more amounts to figure the amount to enter on a line, include cents when adding and round off only the total.

Name & address Please use the mailing label we sent you. It can help speed your refund. After you complete your return, put the label in the name and address area. Cross out any errors. Print the right information on the label (including apartment number). **If you don't have a label,** print your name, address, and social security number. If your post office does not deliver mail to your home and you have a P.O. box, show your P.O. box number instead of your home address.

Presidential campaign fund Congress set up this fund to help pay for Presidential election costs. If you want $1 of your tax to go to this fund, check the "Yes" box. If you check "Yes," your tax or refund will not change.

Report your income **Line 1.** If you don't get your W-2 by February 15, contact your local IRS office. You must still report your wages, salaries, and tips even if you don't get a W-2 from your employer. Students, if you received a scholarship or fellowship, see page 23 in the booklet.

Line 2. Banks, savings and loans, credit unions, etc., should send you a Form 1099-INT showing the amount of taxable interest paid to you. You must report all your taxable interest even if you don't get a Form 1099-INT. If you had tax-exempt interest, such as on municipal bonds, write "TEI" in the space to the left of line 2. After "TEI," show the amount of your tax-exempt interest. **Do not add tax-exempt interest in the total on line 2.**

Line 4. If you checked "Yes" because someone can claim you as a dependent, fill in this worksheet to figure the amount to enter on line 4.

Standard deduction worksheet for dependents who checked "Yes" on line 4

A.	Enter the amount from line 1 on front.	A.	
B.	Minimum amount.	B.	500.00
C.	**Compare** the amounts on lines A and B above. Enter the LARGER of the two amounts here.	C.	
D.	**Maximum amount.**	D.	3,100.00
E.	**Compare** the amounts on lines C and D above. Enter the SMALLER of the two amounts here and on line 4 on front.	E.	

If you checked "No" because no one can claim you as a dependent, enter 5,100 on line 4. This is the total of your standard deduction (3,100) and personal exemption (2,000).

Figure your tax **Line 6.** If you received a Form 1099-INT showing income **tax withheld** (backup withholding), include the amount in the total on line 6. To the left of line 6, write "Form 1099." If you had two or more employers and had total wages of over $48,000, see page 35 in the booklet.

If you want IRS to figure your tax, skip lines 7 through 9. Then sign and date your return. If you paid too much tax, we will send you a refund. If you didn't pay enough tax, we will send you a bill. We won't charge you interest or a late payment penalty if you pay within 30 days of the notice date or by April 16, whichever is later. If you want to figure your own tax, complete the rest of your return.

Amount you owe **Line 9.** If you owe tax, attach your check or money order for the full amount. Write your social security number, daytime phone number, and "Form 1040EZ" on your payment.

Sign your return You must sign and date your return. If you pay someone to prepare your return, that person must sign it and show other information. See page 40 in the booklet.

Mailing your return Mail your return by **April 16.** Use the envelope that came with your booklet. If you don't have that envelope, see page 49 in the booklet for the address.

Section 4—Tax Table

For persons with taxable incomes of less than $50,000

Example: Mr. and Mrs. Green are filing a joint return. Their taxable income on line 19 of Form 1040A is $23,250. First, they find the $23,250-23,300 income line. Next, they find the column for married filing jointly and read down the column. The amount shown where the income line and filing status column meet is $3,491. This is the tax amount they must write on line 20 of Form 1040A.

At least	But less than	Single (and 1040EZ filers)	Married filing jointly *	Married filing separately	Head of a household
		Your tax is—			
23,200	23,250	4,092	3,484	4,491	3,484
23,250	23,300	4,106	3,491	4,505	3,491
23,300	23,350	4,120	3,499	4,519	3,499
23,350	23,400	4,134	3,506	4,533	3,506

If 1040A, line 19, OR 1040EZ, line 5 is—		And you are—			
At least	But less than	Single (and 1040EZ filers)	Married filing jointly *	Married filing separately	Head of a household
		Your tax is—			
$0	$5	$0	$0	$0	$0
5	15	2	2	2	2
15	25	3	3	3	3
25	50	6	6	6	6
50	75	9	9	9	9
75	100	13	13	13	13
100	125	17	17	17	17
125	150	21	21	21	21
150	175	24	24	24	24
175	200	28	28	28	28
200	225	32	32	32	32
225	250	36	36	36	36
250	275	39	39	39	39
275	300	43	43	43	43
300	325	47	47	47	47
325	350	51	51	51	51
350	375	54	54	54	54
375	400	58	58	58	58
400	425	62	62	62	52
425	450	66	66	66	66
450	475	69	69	69	69
475	500	73	73	73	73
500	525	77	77	77	77
525	550	81	81	81	81
550	575	84	84	84	84
575	600	88	88	88	88
600	625	92	92	92	92
625	650	96	96	96	96
650	675	99	99	99	99
675	700	103	103	103	103
700	725	107	107	107	107
725	750	111	111	111	111
750	775	114	114	114	114
775	800	118	118	118	118
800	825	122	122	122	122
825	850	126	126	126	126
850	875	129	129	129	129
875	900	133	133	133	133
900	925	137	137	137	137
925	950	141	141	141	141
950	975	144	144	144	144
975	1,000	148	148	148	148
1,000					
1,000	1,025	152	152	152	152
1,025	1,050	156	156	156	156
1,050	1,075	159	159	159	159
1,075	1,100	163	163	163	163
1,100	1,125	167	167	167	167
1,125	1,150	171	171	171	171
1,150	1,175	174	174	174	174
1,175	1,200	178	178	178	178
1,200	1,225	182	182	182	182
1,225	1,250	186	186	186	186
1,250	1,275	189	189	189	189
1,275	1,300	193	193	193	193
1,300	1,325	197	197	197	197
1,325	1,350	201	201	201	201
1,350	1,375	204	204	204	204
1,375	1,400	208	208	208	208
1,400	1,425	212	212	212	212
1,425	1,450	216	216	216	216
1,450	1,475	219	219	219	219
1,475	1,500	223	223	223	223
1,500	1,525	227	227	227	227
1,525	1,550	231	231	231	231
1,550	1,575	234	234	234	234
1,575	1,600	238	238	238	238
1,600	1,625	242	242	242	242
1,625	1,650	246	246	246	246
1,650	1,675	249	249	249	249
1,675	1,700	253	253	253	253
1,700	1,725	257	257	257	257
1,725	1,750	261	261	261	261
1,750	1,775	264	264	264	264
1,775	1,800	268	268	268	268
1,800	1,825	272	272	272	272
1,825	1,850	276	276	276	276
1,850	1,875	279	279	279	279
1,875	1,900	283	283	283	283
1,900	1,925	287	287	287	287
1,925	1,950	291	291	291	291
1,950	1,975	294	294	294	294
1,975	2,000	298	298	298	298
2,000					
2,000	2,025	302	302	302	302
2,025	2,050	306	306	306	306
2,050	2,075	309	309	309	309
2,075	2,100	313	313	313	313
2,100	2,125	317	317	317	317
2,125	2,150	321	321	321	321
2,150	2,175	324	324	324	324
2,175	2,200	328	328	328	328
2,200	2,225	332	332	332	332
2,225	2,250	336	336	336	336
2,250	2,275	339	339	339	339
2,275	2,300	343	343	343	343
2,300	2,325	347	347	347	347
2,325	2,350	351	351	351	351
2,350	2,375	354	354	354	354
2,375	2,400	358	358	358	358
2,400	2,425	362	362	362	362
2,425	2,450	366	366	366	366
2,450	2,475	369	369	369	369
2,475	2,500	373	373	373	373
2,500	2,525	377	377	377	377
2,525	2,550	381	381	381	381
2,550	2,575	384	384	384	384
2,575	2,600	388	388	388	388
2,600	2,625	392	392	392	392
2,625	2,650	396	396	396	396
2,650	2,675	399	399	399	399
2,675	2,700	403	403	403	403
2,700	2,725	407	407	407	407
2,725	2,750	411	411	411	411
2,750	2,775	414	414	414	414
2,775	2,800	418	418	418	418
2,800	2,825	422	422	422	422
2,825	2,850	426	426	426	426
2,850	2,875	429	429	429	429
2,875	2,900	433	433	433	433
2,900	2,925	437	437	437	437
2,925	2,950	441	441	441	441
2,950	2,975	444	444	444	444
2,975	3,000	448	448	448	448
3,000					
3,000	3,050	454	454	454	454
3,050	3,100	461	461	461	461
3,100	3,150	469	469	469	469
3,150	3,200	476	476	476	476
3,200	3,250	484	484	484	484
3,250	3,300	491	491	491	491
3,300	3,350	499	499	499	499
3,350	3,400	506	506	506	506
3,400	3,450	514	514	514	514
3,450	3,500	521	521	521	521
3,500	3,550	529	529	529	529
3,550	3,600	536	536	536	536
3,600	3,650	544	544	544	544
3,650	3,700	551	551	551	551
3,700	3,750	559	559	559	559
3,750	3,800	566	566	566	566
3,800	3,850	574	574	574	574
3,850	3,900	581	581	581	581
3,900	3,950	589	589	589	589
3,950	4,000	596	596	596	596
4,000					
4,000	4,050	604	604	604	604
4,050	4,100	611	611	611	611
4,100	4,150	619	619	619	619
4,150	4,200	626	626	626	626
4,200	4,250	634	634	634	634
4,250	4,300	641	641	641	641
4,300	4,350	649	649	649	649
4,350	4,400	656	656	656	656
4,400	4,450	664	664	664	664
4,450	4,500	671	671	671	671
4,500	4,550	679	679	679	679
4,550	4,600	686	686	686	686
4,600	4,650	694	694	694	694
4,650	4,700	701	701	701	701
4,700	4,750	709	709	709	709
4,750	4,800	716	716	716	716
4,800	4,850	724	724	724	724
4,850	4,900	731	731	731	731
4,900	4,950	739	739	739	739
4,950	5,000	746	746	746	746

* This column must also be used by a qualifying widow(er).

Continued on next page

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Tax Table—*Continued*

If 1040A, line 19, OR 1040EZ, line 5 is—		And you are—			
At least	But less than	Single (and 1040EZ filers)	Married filing jointly *	Married filing separately	Head of a household
		Your tax is—			
5,000					
5,000	5,050	754	754	754	754
5,050	5,100	761	761	761	761
5,100	5,150	769	769	769	769
5,150	5,200	776	776	776	776
5,200	5,250	784	784	784	784
5,250	5,300	791	791	791	791
5,300	5,350	799	799	799	799
5,350	5,400	806	806	806	806
5,400	5,450	814	814	814	814
5,450	5,500	821	821	821	821
5,500	5,550	829	829	829	829
5,550	5,600	836	836	836	836
5,600	5,650	844	844	844	844
5,650	5,700	851	851	851	851
5,700	5,750	859	859	859	859
5,750	5,800	866	866	866	866
5,800	5,850	874	874	874	874
5,850	5,900	881	881	881	881
5,900	5,950	889	889	889	889
5,950	6,000	896	896	896	896
6,000					
6,000	6,050	904	904	904	904
6,050	6,100	911	911	911	911
6,100	6,150	919	919	919	919
6,150	6,200	926	926	926	926
6,200	6,250	934	934	934	934
6,250	6,300	941	941	941	941
6,300	6,350	949	949	949	949
6,350	6,400	956	956	956	956
6,400	6,450	964	964	964	964
6,450	6,500	971	971	971	971
6,500	6,550	979	979	979	979
6,550	6,600	986	986	986	986
6,600	6,650	994	994	994	994
6,650	6,700	1,001	1,001	1,001	1,001
6,700	6,750	1,009	1,009	1,009	1,009
6,750	6,800	1,016	1,016	1,016	1,016
6,800	6,850	1,024	1,024	1,024	1,024
6,850	6,900	1,031	1,031	1,031	1,031
6,900	6,950	1,039	1,039	1,039	1,039
6,950	7,000	1,046	1,046	1,046	1,046
7,000					
7,000	7,050	1,054	1,054	1,054	1,054
7,050	7,100	1,061	1,061	1,061	1,061
7,100	7,150	1,069	1,069	1,069	1,069
7,150	7,200	1,076	1,076	1,076	1,076
7,200	7,250	1,084	1,084	1,084	1,084
7,250	7,300	1,091	1,091	1,091	1,091
7,300	7,350	1,099	1,099	1,099	1,099
7,350	7,400	1,106	1,106	1,106	1,106
7,400	7,450	1,114	1,114	1,114	1,114
7,450	7,500	1,121	1,121	1,121	1,121
7,500	7,550	1,129	1,129	1,129	1,129
7,550	7,600	1,136	1,136	1,136	1,136
7,600	7,650	1,144	1,144	1,144	1,144
7,650	7,700	1,151	1,151	1,151	1,151
7,700	7,750	1,159	1,159	1,159	1,159
7,750	7,800	1,166	1,166	1,166	1,166
7,800	7,850	1,174	1,174	1,174	1,174
7,850	7,900	1,181	1,181	1,181	1,181
7,900	7,950	1,189	1,189	1,189	1,189
7,950	8,000	1,196	1,196	1,196	1,196
8,000					
8,000	8,050	1,204	1,204	1,204	1,204
8,050	8,100	1,211	1,211	1,211	1,211
8,100	8,150	1,219	1,219	1,219	1,219
8,150	8,200	1,226	1,226	1,226	1,226
8,200	8,250	1,234	1,234	1,234	1,234
8,250	8,300	1,241	1,241	1,241	1,241
8,300	8,350	1,249	1,249	1,249	1,249
8,350	8,400	1,256	1,256	1,256	1,256
8,400	8,450	1,264	1,264	1,264	1,264
8,450	8,500	1,271	1,271	1,271	1,271
8,500	8,550	1,279	1,279	1,279	1,279
8,550	8,600	1,286	1,286	1,286	1,286
8,600	8,650	1,294	1,294	1,294	1,294
8,650	8,700	1,301	1,301	1,301	1,301
8,700	8,750	1,309	1,309	1,309	1,309
8,750	8,800	1,316	1,316	1,316	1,316
8,800	8,850	1,324	1,324	1,324	1,324
8,850	8,900	1,331	1,331	1,331	1,331
8,900	8,950	1,339	1,339	1,339	1,339
8,950	9,000	1,346	1,346	1,346	1,346
9,000					
9,000	9,050	1,354	1,354	1,354	1,354
9,050	9,100	1,361	1,361	1,361	1,361
9,100	9,150	1,369	1,369	1,369	1,369
9,150	9,200	1,376	1,376	1,376	1,376
9,200	9,250	1,384	1,384	1,384	1,384
9,250	9,300	1,391	1,391	1,391	1,391
9,300	9,350	1,399	1,399	1,399	1,399
9,350	9,400	1,406	1,406	1,406	1,406
9,400	9,450	1,414	1,414	1,414	1,414
9,450	9,500	1,421	1,421	1,421	1,421
9,500	9,550	1,429	1,429	1,429	1,429
9,550	9,600	1,436	1,436	1,436	1,436
9,600	9,650	1,444	1,444	1,444	1,444
9,650	9,700	1,451	1,451	1,451	1,451
9,700	9,750	1,459	1,459	1,459	1,459
9,750	9,800	1,466	1,466	1,466	1,466
9,800	9,850	1,474	1,474	1,474	1,474
9,850	9,900	1,481	1,481	1,481	1,481
9,900	9,950	1,489	1,489	1,489	1,489
9,950	10,000	1,496	1,496	1,496	1,496
10,000					
10,000	10,050	1,504	1,504	1,504	1,504
10,050	10,100	1,511	1,511	1,511	1,511
10,100	10,150	1,519	1,519	1,519	1,519
10,150	10,200	1,526	1,526	1,526	1,526
10,200	10,250	1,534	1,534	1,534	1,534
10,250	10,300	1,541	1,541	1,541	1,541
10,300	10,350	1,549	1,549	1,549	1,549
10,350	10,400	1,556	1,556	1,556	1,556
10,400	10,450	1,564	1,564	1,564	1,564
10,450	10,500	1,571	1,571	1,571	1,571
10,500	10,550	1,579	1,579	1,579	1,579
10,550	10,600	1,586	1,586	1,586	1,586
10,600	10,650	1,594	1,594	1,594	1,594
10,650	10,700	1,601	1,601	1,601	1,601
10,700	10,750	1,609	1,609	1,609	1,609
10,750	10,800	1,616	1,616	1,616	1,616
10,800	10,850	1,624	1,624	1,624	1,624
10,850	10,900	1,631	1,631	1,631	1,631
10,900	10,950	1,639	1,639	1,639	1,639
10,950	11,000	1,646	1,646	1,646	1,646
11,000					
11,000	11,050	1,654	1,654	1,654	1,654
11,050	11,100	1,661	1,661	1,661	1,661
11,100	11,150	1,669	1,669	1,669	1,669
11,150	11,200	1,676	1,676	1,676	1,676
11,200	11,250	1,684	1,684	1,684	1,684
11,250	11,300	1,691	1,691	1,691	1,691
11,300	11,350	1,699	1,699	1,699	1,699
11,350	11,400	1,706	1,706	1,706	1,706
11,400	11,450	1,714	1,714	1,714	1,714
11,450	11,500	1,721	1,721	1,721	1,721
11,500	11,550	1,729	1,729	1,729	1,729
11,550	11,600	1,736	1,736	1,736	1,736
11,600	11,650	1,744	1,744	1,744	1,744
11,650	11,700	1,751	1,751	1,751	1,751
11,700	11,750	1,759	1,759	1,759	1,759
11,750	11,800	1,766	1,766	1,766	1,766
11,800	11,850	1,774	1,774	1,774	1,774
11,850	11,900	1,781	1,781	1,781	1,781
11,900	11,950	1,789	1,789	1,789	1,789
11,950	12,000	1,796	1,796	1,796	1,796
12,000					
12,000	12,050	1,804	1,804	1,804	1,804
12,050	12,100	1,811	1,811	1,811	1,811
12,100	12,150	1,819	1,819	1,819	1,819
12,150	12,200	1,826	1,826	1,826	1,826
12,200	12,250	1,834	1,834	1,834	1,834
12,250	12,300	1,841	1,841	1,841	1,841
12,300	12,350	1,849	1,849	1,849	1,849
12,350	12,400	1,856	1,856	1,856	1,856
12,400	12,450	1,864	1,864	1,864	1,864
12,450	12,500	1,871	1,871	1,871	1,871
12,500	12,550	1,879	1,879	1,879	1,879
12,550	12,600	1,886	1,886	1,886	1,886
12,600	12,650	1,894	1,894	1,894	1,894
12,650	12,700	1,901	1,901	1,901	1,901
12,700	12,750	1,909	1,909	1,909	1,909
12,750	12,800	1,916	1,916	1,916	1,916
12,800	12,850	1,924	1,924	1,924	1,924
12,850	12,900	1,931	1,931	1,931	1,931
12,900	12,950	1,939	1,939	1,939	1,939
12,950	13,000	1,946	1,946	1,946	1,946
13,000					
13,000	13,050	1,954	1,954	1,954	1,954
13,050	13,100	1,961	1,961	1,961	1,961
13,100	13,150	1,969	1,969	1,969	1,969
13,150	13,200	1,976	1,976	1,976	1,976
13,200	13,250	1,984	1,984	1,984	1,984
13,250	13,300	1,991	1,991	1,991	1,991
13,300	13,350	1,999	1,999	1,999	1,999
13,350	13,400	2,006	2,006	2,006	2,006
13,400	13,450	2,014	2,014	2,014	2,014
13,450	13,500	2,021	2,021	2,021	2,021
13,500	13,550	2,029	2,029	2,029	2,029
13,550	13,600	2,036	2,036	2,036	2,036
13,600	13,650	2,044	2,044	2,044	2,044
13,650	13,700	2,051	2,051	2,051	2,051
13,700	13,750	2,059	2,059	2,059	2,059
13,750	13,800	2,066	2,066	2,066	2,066
13,800	13,850	2,074	2,074	2,074	2,074
13,850	13,900	2,081	2,081	2,081	2,081
13,900	13,950	2,089	2,089	2,089	2,089
13,950	14,000	2,096	2,096	2,096	2,096

* This column must also be used by a qualifying widow(er).

Continued on next page

Task Document:

1040EZ Tax Form

Questions:

Name one place where you can find the instructions for completing the 1040EZ tax return.

Reading Purpose: To Perform a Task **Reading Stance:** Developing an Interpretation

Responses to this question were scored
Unacceptable or Acceptable

	Overall percentage "Acceptable"	Percentage "Acceptable" within achievement level intervals		
		Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
Grade 12	76 (1.2)	78 (2.5)	89 (1.8)	97 (1.8)

* NAEP Reading composite scale range
The standard errors of the estimated percentages appear in parentheses.

Acceptable responses provided an appropriate location to find the instructions as presented in the document.

Sample Acceptable Response:

The instruction for completing the form can be found on the back Of the form or in the 1040A/ 1040EZ Booklet.

In order to find the amount of your taxable income, you must

- **A.** multiply the state sales tax by your gross income
- ★**B.** subtract line 4 from line 3 on the tax return
- **C.** add line 6 and line 7 on the tax return
- **D.** ask your employer for the amount of your adjusted income

Reading Purpose: To Perform a Task **Reading Stance:** Developing an Interpretation

		Percentage correct within achievement level intervals		
	Overall percentage correct	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
Grade 12	64 (1.3)	63 (2.3)	79 (1.9)	90 (5.2)

* NAEP Reading composite scale range.

The standard errors of the estimated percentages appear in parentheses.

What should you do if you have tax-exempt interest?

- **A.** Ignore the fact that you have interest and do not report it.
- **B.** Obtain a separate interest-exemption tax form.
- ★**C.** Write the amount of interest and the letters TEI to the left of line 2.
- **D.** Add the amount of interest to your taxable income total on line 2.

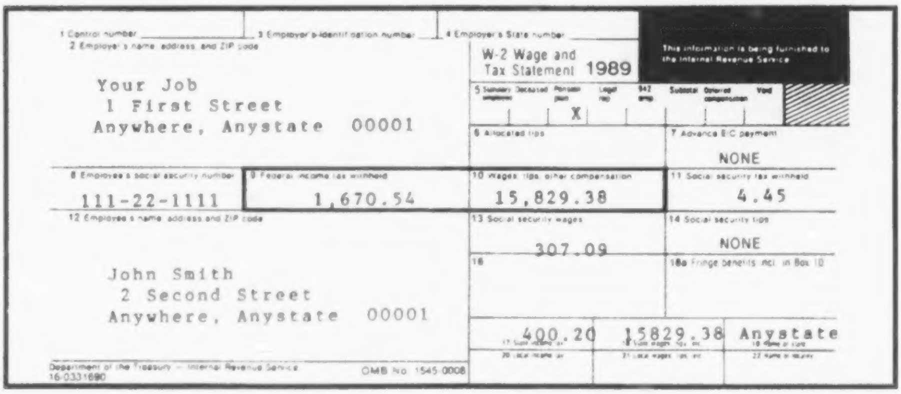
Reading Purpose: To Perform a Task **Reading Stance:** Developing an Interpretation

		Percentage correct within achievement level intervals		
	Overall percentage correct	Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
Grade 12	59 (1.5)	55 (2.5)	77 (2.0)	90 (3.9)

* NAEP Reading composite scale range.

The standard errors of the estimated percentages appear in parentheses.

Complete the income tax return, using the tax table and the following W-2 statement. *You have no taxable interest to claim.*



1 Control number
3 Employer's identification number
4 Employer's State number
2 Employer's name, address, and ZIP code

Your Job
1 First Street
Anywhere, Anystate 00001

W-2 Wage and Tax Statement 1989

This information is being furnished to the Internal Revenue Service

5 Statutory employee ☐ Deceased ☐ Pension plan ☒ Legal rep. ☐ 942 emp. ☐ Subtotal ☐ Deferred compensation ☐ Void ☐

6 Allocated tips
7 Advance EIC payment: NONE
8 Employee's social security number: 111-22-1111
9 Federal income tax withheld: 1,670.54
10 Wages, tips, other compensation: 15,829.38
11 Social security tax withheld: 4.45
12 Employee's name, address and ZIP code

John Smith
2 Second Street
Anywhere, Anystate 00001

13 Social security wages: 307.09
14 Social security tips: NONE
16
16a Fringe benefits incl. in Box 10
17 State income tax: 400.20
18 State wages, tips, etc.: 15829.38
19 Name of state: Anystate
20 Local income tax
21 Local wages, tips, etc.
22 Name of locality

Department of the Treasury — Internal Revenue Service
16-0331690
OMB No. 1545-0008

Reading Purpose: To Perform a Task **Reading Stance:** Critical Stance

Responses to this question were scored
Unstisfactory, Parial, Essential, or Extensive

	Overall percentage "Essential" or better	Percentage "Essential" or better within achievement level intervals		
		Basic 265-301*	Proficient 302-345*	Advanced 346 and above*
Grade 12	15 (1.1)	12 (2.2)	22 (1.7)	31 (7.5)

* NAEP Reading composite scale range.
The standard errors of the estimated percentages appear in parentheses.

Responses scored Essential followed the instructions and completed most of the sections of the income tax form; however, these responses omitted information necessary to fully complete the task.

Responses scored Extensive demonstrated a more thorough understanding of the instructions by completing all the sections of the income tax form.

Sample Essential Response:

Department of the Treasury - Internal Revenue Service

Form **1040EZ** **Income Tax Return for Single Filers With No Dependents** (5)

OMB No. 1545-0675

Name & address

Use the IRS mailing label. If you don't have one, please print.

LABEL HERE

John Smith
Print your name above (first, initial, last)

2 Second Street
Home address (number and street). (If you have a P.O. box, see back.) Apt. no.

Anywhere Any state 00001
City, town or post office, state, and ZIP code

Please print your numbers like this: 9876543210

Your social security number: 111 22 1111

Instructions are on the back. Also, see the Form 1040A/1040EZ booklet, especially the checklist on page 14.

Presidential Election Campaign Fund
Do you want $1 to go to this fund? Note: Checking "Yes" will not change your tax or reduce your refund. ▶ Yes ☐ No ☒

Dollars Cents

Report your income

1 Total wages, salaries, and tips. This should be shown in Box 10 of your W-2 form(s). (Attach your W-2 form(s).) 1 15,829.38

2 Taxable interest income of $400 or less. If the total is more than $400, you cannot use Form 1040EZ. 2

3 Add line 1 and line 2. This is your **adjusted gross income.** 3 15,829.38

Note: You must check Yes or No.

4 Can your parents (or someone else) claim you on their return?
☐ **Yes.** Do worksheet on back; enter amount from line E here.
☑ **No.** Enter 5,100. This is the total of your standard deduction and personal exemption. 4 5,100.00

5 Subtract line 4 from line 3. If line 4 is larger than line 3, enter 0. This is your **taxable income.** 5 10,729.38

Figure your tax

6 Enter your Federal income tax withheld from Box 9 of your W-2 form(s). 6 1,670.54

7 **Tax.** Use the amount on **line 5** to look up your tax in the tax table. Use the **single** column in the table. Enter the tax from the table on this line. 7 1,609.00

Refund or amount you owe

8 If line 6 is larger than line 7, subtract line 7 from line 6. This is your **refund.** 8 61.54

Attach tax payment here.

9 If line 7 is larger than line 6, subtract line 6 from line 7. This is the **amount you owe.** Attach check or money order for the full amount, payable to "Internal Revenue Service." 9

Sign your return

(Keep a copy of this form for your records.)

I have read this return. Under penalties of perjury, I declare that to the best of my knowledge and belief, the return is true, correct, and complete.

Your signature Date

X John Smith

For IRS Use Only—Please do not write in boxes below.

For Privacy Act and Paperwork Reduction Act Notice, see page 3 in the booklet.

Form 1040EZ

Sample Extensive Response:

Form **1040EZ**

Department of the Treasury - Internal Revenue Service

Income Tax Return for Single Filers With No Dependents (5)

OMB No. 1545-0675

Name & address

Use the IRS mailing label. If you don't have one, please print.

LABEL HERE

John Smith
Print your name above (first, initial, last)

2 Second Street
Home address (number and street). (If you have a P.O. box, see back.) Apt. no.

Anywhere, Anystate 00001
City, town or post office, state, and ZIP code

Please print your numbers like this: 9 8 7 6 5 4 3 2 1 0

111 22 1111
Your social security number

Instructions are on the back. Also, see the Form 1040A/1040EZ booklet, especially the checklist on page 14.

Presidential Election Campaign Fund
Do you want $1 to go to this fund? Note: Checking "Yes" will not change your tax or reduce your refund. ▶ Yes ☐ No ☒

			Dollars	Cents
Report your income	1 Total wages, salaries, and tips. This should be shown in Box 10 of your W-2 form(s). (Attach your W-2 form(s).)	1	15,829	38
	2 Taxable interest income of $400 or less. If the total is more than $400, you cannot use Form 1040EZ.	2	000	00
	3 Add line 1 and line 2. This is your **adjusted gross income.**	3	15,829	38
Note: You must check Yes or No.	4 Can your parents (or someone else) claim you on their return? ☐ **Yes.** Do worksheet on back; enter amount from line E here. ☑ **No.** Enter 5,100. This is the total of your standard deduction and personal exemption.	4	5,100	00
	5 Subtract line 4 from line 3. If line 4 is larger than line 3, enter 0. This is your **taxable income.**	5	10,729	38
Figure your tax	6 Enter your Federal income tax withheld from Box 9 of your W-2 form(s).	6	01,670	54
	7 **Tax.** Use the amount on **line 5** to look up your tax in the tax table. Use the **single** column in the table. Enter the tax from the table on this line.	7	01,609	00
Refund or amount you owe	8 If line 6 is larger than line 7, subtract line 7 from line 6. This is your **refund.**	8	0,041	54
Attach tax payment here.	9 If line 7 is larger than line 6, subtract line 6 from line 7. This is the **amount you owe.** Attach check or money order for the full amount, payable to "Internal Revenue Service."	9	0,000	00

Sign your return

(Keep a copy of this form for your records.)

I have read this return. Under penalties of perjury, I declare that to the best of my knowledge and belief, the return is true, correct, and complete.

Your signature: x John Smith

Date: 1/21/91

For IRS Use Only—Please do not write in boxes below.

☐☐☐☐

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For Privacy Act and Paperwork Reduction Act Notice, see page 3 in the booklet.

Form 1040EZ

APPENDIX D

Additional Average Scale Score and Achievement Level Results for the States

This appendix contains state results for major reporting subgroups. Scale score and achievement level results are presented for fourth graders who participated in the 1992, 1994, and 1998 state assessments, and for eighth graders whose first year of participation was 1998. Also included at the end of this appendix are tables showing the percentages of students within each subgroup for participating states.

Table D.11

Average grade 4 reading scale scores by gender for public schools only: 1992, 1994, and 1998

	Average scale score Male			Average scale score Female		
	1992	1994	1998	1992	1994	1998
Nation	211 (1.3)	207 (1.3)	212 (1.2)**	219 (1.1)	218 (1.2)	218 (0.8)
States						
Alabama	204 (1.7)	203 (1.9)	208 (1.8)	211 (2.0)	213 (1.6)	214 (2.1)
Arizona	206 (1.5)	201 (2.2)	201 (2.2)	213 (1.4)	211 (2.1)	212 (2.3)
Arkansas	208 (1.5)	204 (1.9)	206 (1.8)	214 (1.4)	213 (1.8)	212 (1.7)
California †	198 (2.3)	194 (1.9)	198 (3.6)	207 (2.1)	200 (2.2)	206 (3.3)
Colorado	214 (1.3)	209 (1.8)	218 (1.7)***	219 (1.4)	218 (1.5)	225 (1.5)***
Connecticut	219 (1.5)	218 (1.8)	229 (2.0)****	224 (1.6)	226 (2.0)	234 (2.0)***
Delaware	209 (1.2)	200 (2.1)	208 (1.5)+	217 (1.0)	212 (1.5)	216 (1.9)
Florida	205 (1.5)	199 (2.1)	203 (1.9)	211 (1.4)	210 (1.8)	212 (1.7)
Georgia	210 (1.7)	201 (3.0)	206 (1.9)	215 (1.7)	212 (2.2)	213 (1.7)
Hawaii	198 (2.0)	194 (2.1)	194 (2.5)	209 (1.7)	208 (1.7)	205 (1.8)
Iowa †	222 (1.3)	219 (1.6)	218 (1.5)	229 (1.1)	227 (1.5)	228 (1.4)
Kansas †	—	—	219 (1.6)	—	—	226 (1.6)
Kentucky	209 (1.6)	206 (1.8)	216 (1.8)***	216 (1.4)	217 (2.0)	220 (1.6)
Louisiana	200 (1.5)	193 (1.6)	199 (1.8)*	207 (1.3)	200 (1.7)	209 (1.6)**
Maine	225 (1.1)	225 (1.6)	222 (1.4)	229 (1.4)	231 (1.6)	229 (1.5)
Maryland	207 (1.8)	205 (1.8)	209 (2.0)	215 (1.8)	214 (1.8)	221 (1.6)*
Massachusetts †	225 (1.2)	221 (1.5)	221 (1.6)	227 (1.1)	226 (1.5)	229 (1.7)
Michigan	214 (1.8)	—	212 (1.9)	218 (1.5)	—	221 (1.8)
Minnesota †	217 (1.5)	214 (1.5)	218 (1.9)	225 (1.3)	223 (1.9)	226 (1.5)
Mississippi	196 (1.8)	196 (1.6)	201 (1.8)*	202 (1.3)	207 (1.9)	208 (1.5)*
Missouri	217 (1.4)	213 (1.9)	211 (2.0)*	223 (1.5)	221 (1.8)	222 (1.6)
Montana †	—	218 (1.6)	221 (2.0)	—	227 (1.7)	231 (2.7)
Nevada	—	—	204 (1.6)	—	—	211 (1.9)
New Hampshire †	224 (1.4)	218 (1.6)	222 (1.8)	231 (1.2)	229 (1.8)	229 (1.5)
New Mexico	209 (1.5)	201 (2.1)	202 (2.0)*	213 (1.8)	208 (1.8)	209 (2.6)
New York †	212 (1.9)	207 (1.8)	214 (1.7)*	218 (1.7)	216 (1.6)	218 (2.0)
North Carolina	209 (1.4)	209 (1.7)	213 (1.7)*	214 (1.3)	220 (1.8)	220 (1.7)*
Oklahoma	218 (1.2)	—	219 (1.2)	223 (1.1)	—	220 (1.5)
Oregon	—	—	210 (1.8)	—	—	218 (1.9)
Rhode Island	215 (2.1)	215 (1.5)	217 (2.3)	218 (2.0)	225 (1.5)	220 (2.3)
South Carolina	206 (1.5)	199 (1.7)	207 (1.5)**	213 (1.5)	208 (1.6)	214 (1.6)*
Tennessee	209 (1.6)	208 (2.1)	209 (1.7)	215 (1.6)	217 (1.9)	216 (1.8)
Texas	209 (1.7)	210 (2.0)	213 (2.3)	216 (1.8)	214 (2.1)	221 (2.1)
Utah	217 (1.5)	213 (1.7)	212 (1.8)*	224 (1.2)	222 (1.3)	219 (1.5)*
Virginia	217 (1.8)	208 (1.8)	214 (1.8)*	225 (1.4)	219 (1.5)	223 (1.4)
Washington	—	209 (1.8)	212 (1.5)	—	217 (1.7)	222 (1.6)
West Virginia	211 (1.4)	208 (1.4)	213 (1.8)	220 (1.6)	218 (1.4)	219 (1.8)
Wisconsin †	221 (1.2)	221 (1.2)	222 (1.8)	226 (1.2)	227 (1.5)	226 (1.3)
Wyoming	220 (1.5)	218 (1.3)	216 (2.0)	226 (1.0)	224 (1.6)	223 (1.8)
Other Jurisdictions						
District of Columbia	185 (1.3)	174 (1.2)	177 (1.8)**	191 (1.0)	183 (1.2)	186 (2.1)*
DDESS	—	—	217 (1.5)	—	—	223 (1.5)
DoDDS	—	213 (1.3)	219 (1.4)**	—	223 (1.0)	228 (1.3)**
Virgin Islands	164 (1.9)	—	169 (5.0)	179 (2.1)	—	186 (2.1)*

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the average scale score in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. ++ Indicates that the average scale score in 1998 was significantly different from that in 1994 using a multiple comparison procedure based on all jurisdictions that participated both years. + Indicates that the average scale score in 1998 was significantly different from that in 1994 if only one jurisdiction or the nation is being examined.

The standard errors of the estimated scale scores appear in parentheses.

— Indicates jurisdiction did not participate. † Indicates jurisdiction did not meet one or more of the guidelines for school participation. DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.21

Percentage of grade 4 students at or above the Proficient level by gender for public schools only: 1992, 1994, and 1998

	Percentage at or above Proficient: Male			Percentage at or above Proficient Female		
	1992	1994	1998	1992	1994	1998
Nation	24 (1.5)	24 (1.3)	27 (1.3)	30 (1.5)	32 (1.6)	31 (1.1)
States						
Alabama	17 (1.6)	20 (1.6)	22 (1.8)	23 (2.0)	26 (1.9)	26 (2.8)
Arizona	17 (1.4)	20 (2.0)	18 (1.8)	24 (1.6)	28 (2.0)	26 (1.9)
Arkansas	20 (1.3)	21 (1.6)	22 (1.9)	25 (1.8)	27 (1.7)	24 (1.7)
California †	16 (2.0)	15 (1.6)	18 (2.3)	22 (1.9)	20 (2.1)	22 (2.1)
Colorado	22 (1.6)	25 (2.0)	30 (2.0)**	29 (1.9)	31 (2.0)	37 (2.1)*
Connecticut	30 (1.9)	34 (1.9)	41 (2.7)**+	37 (1.8)	43 (2.3)	49 (2.9)**
Delaware	21 (1.6)	19 (1.9)	21 (1.5)	27 (1.3)	27 (1.3)	28 (2.1)
Florida	20 (1.4)	19 (1.7)	19 (1.3)	23 (1.3)	26 (1.8)	26 (1.6)
Georgia	23 (1.5)	23 (2.2)	22 (2.1)	27 (1.9)	28 (2.4)	27 (2.0)
Hawaii	14 (1.4)	16 (1.4)	15 (1.3)	20 (1.8)	22 (2.0)	20 (1.5)
Iowa †	32 (2.0)	30 (1.9)	29 (1.9)	40 (1.9)	40 (1.9)	40 (2.1)
Kansas †	—	—	29 (2.0)	—	—	39 (2.4)
Kentucky	21 (1.9)	22 (1.8)	27 (2.0)	25 (1.9)	29 (2.6)	31 (2.2)
Louisiana	14 (1.5)	13 (1.2)	16 (1.6)	17 (1.4)	16 (1.4)	22 (1.9)*
Maine	34 (1.8)	38 (2.1)	32 (2.4)	38 (2.3)	44 (2.1)	41 (2.3)
Maryland	20 (1.5)	23 (1.8)	24 (2.1)	28 (1.9)	30 (1.7)	34 (2.2)
Massachusetts †	34 (2.3)	33 (2.1)	31 (2.2)	38 (1.6)	39 (2.1)	42 (2.4)
Michigan	24 (2.3)	—	23 (1.7)	28 (2.2)	—	33 (2.3)
Minnesota †	27 (1.5)	28 (1.9)	32 (1.9)	36 (2.4)	37 (2.1)	40 (2.2)
Mississippi	12 (1.1)	14 (1.4)	16 (1.1)*	15 (1.2)	21 (1.7)	19 (1.8)
Missouri	27 (1.9)	28 (2.2)	23 (1.7)	33 (2.0)	34 (2.3)	35 (2.1)
Montana †	—	30 (2.0)	31 (3.5)	—	40 (2.0)	44 (4.2)
Nevada	—	—	18 (1.7)	—	—	24 (2.1)
New Hampshire †	34 (1.9)	30 (1.7)	35 (2.3)	42 (1.7)	42 (2.4)	41 (2.2)
New Mexico	21 (1.8)	17 (1.7)	19 (1.8)	24 (2.3)	24 (1.9)	25 (1.7)
New York †	24 (1.8)	24 (1.9)	27 (1.9)	29 (1.6)	31 (1.9)	31 (2.2)
North Carolina	23 (1.4)	26 (1.8)	24 (1.6)	26 (1.7)	34 (2.1)	31 (2.0)
Oklahoma	26 (1.5)	—	29 (2.2)	32 (1.8)	—	31 (2.2)
Oregon	—	—	24 (1.6)	—	—	32 (1.9)
Rhode Island	26 (1.8)	27 (1.8)	31 (2.7)	30 (2.3)	37 (1.9)	33 (2.3)
South Carolina	19 (1.4)	17 (1.4)	20 (1.7)	24 (1.9)	23 (1.8)	24 (1.6)
Tennessee	21 (1.9)	23 (1.7)	23 (1.6)	26 (1.9)	30 (2.2)	28 (1.7)
Texas	20 (1.9)	24 (2.1)	25 (2.3)	27 (2.4)	28 (2.4)	32 (2.4)
Utah	27 (2.0)	26 (1.8)	24 (2.1)	33 (1.9)	34 (2.3)	32 (2.1)
Virginia	28 (1.9)	21 (2.1)	26 (2.1)	35 (1.9)	32 (1.8)	33 (1.8)
Washington	—	24 (1.7)	25 (1.7)	—	29 (1.5)	33 (1.8)
West Virginia	21 (1.6)	22 (1.7)	26 (2.0)	30 (1.9)	30 (1.8)	31 (2.2)
Wisconsin †	30 (1.7)	31 (2.0)	32 (2.2)	37 (1.8)	39 (2.3)	37 (2.2)
Wyoming	30 (2.2)	28 (1.5)	26 (2.1)	35 (1.5)	36 (2.0)	34 (2.6)
Other Jurisdictions						
District of Columbia	9 (1.0)	7 (0.8)	8 (1.1)	10 (0.9)	9 (1.2)	12 (1.7)
DDESS	—	—	28 (2.3)	—	—	35 (1.6)
DoDDS	—	22 (1.5)	28 (1.9)*	—	34 (1.6)	39 (1.7)*
Virgin Islands	2 (0.6)	—	6 (1.7)*	5 (1.2)	—	10 (1.6)*

** Indicates that the percentage in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the percentage in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the percentage in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined.

The standard errors of the estimated percentages appear in parentheses.

— Indicates jurisdiction did not participate.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.3

Average grade 4 reading scale scores by race/ethnicity for public schools only: 1992, 1994, and 1998

	Average scale score White			Average scale score Black			Average scale score Hispanic		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Nation	223 (1.3)	223 (1.3)	225 (0.9)	192 (1.6)	186 (1.7)	193 (1.8) **	199 (2.2)	188 (2.7)	195 (1.9)
States									
Alabama	218 (1.5)	220 (1.5)	222 (2.0)	188 (2.2)	188 (1.9)	193 (2.0)	190 (3.7)	178 (4.3)	190 (4.5)
Arizona	220 (1.1)	220 (1.6)	220 (1.4)	200 (4.3)	183 (5.7)	190 (3.8)	198 (2.0)	188 (2.6)	186 (3.7)
Arkansas	219 (1.1)	218 (1.7)	218 (1.3)	190 (1.7)	183 (2.3)	186 (2.4)	188 (3.8)	192 (4.2)	187 (5.3)
California †	218 (2.0)	211 (2.0)	217 (2.6)	184 (3.2)	182 (4.9)	189 (4.6)	183 (2.7)	174 (2.4)	181 (5.2)
Colorado	222 (1.1)	222 (1.3)	229 (1.3) ****	202 (3.4)	191 (4.7)	202 (4.4)	202 (1.9)	193 (2.1)	202 (2.1) *
Connecticut	230 (1.0)	234 (1.3)	240 (1.7) ***	196 (3.1)	190 (4.8)	205 (3.1) *	193 (3.4)	190 (3.9)	205 (3.9) **
Delaware	222 (0.8)	215 (1.3)	220 (1.5) *	195 (1.6)	188 (2.4)	199 (1.9) **	188 (3.2)	190 (3.1)	193 (3.8)
Florida	219 (1.1)	218 (1.6)	219 (1.8)	186 (2.7)	183 (2.4)	189 (2.2)	201 (2.7)	189 (3.1)	200 (3.0) *
Georgia	224 (1.4)	222 (1.9)	225 (2.0)	196 (2.2)	185 (3.2)	193 (2.0)	192 (4.8)	184 (5.7)	193 (4.2)
Hawaii	215 (2.7)	219 (2.1)	211 (2.3) *	192 (4.6)	189 (4.5)	195 (4.6)	193 (2.8)	185 (4.0)	183 (3.5)
Iowa †	227 (1.0)	225 (1.2)	226 (1.2)	209 (3.1)	186 (7.0)	192 (4.1) **	211 (3.1)	204 (4.1)	210 (2.7)
Kansas †	—	—	228 (1.5)	—	—	198 (3.7)	—	—	207 (3.7)
Kentucky	215 (1.2)	215 (1.6)	221 (1.5) ***	197 (3.3)	190 (3.4)	196 (3.0)	195 (5.1)	196 (4.1)	195 (5.1)
Louisiana	216 (1.2)	213 (1.4)	222 (1.3) ****	191 (1.5)	180 (1.6)	186 (2.0)	188 (4.4)	175 (5.0)	184 (4.1)
Maine	228 (1.1)	229 (1.3)	227 (1.2)	*** (***)	*** (***)	*** (***)	209 (3.2)	218 (4.6)	208 (6.2)
Maryland	221 (1.5)	223 (1.5)	229 (1.7) ***	193 (2.6)	185 (2.3)	195 (2.4) *	197 (3.0)	197 (3.5)	200 (4.1)
Massachusetts †	231 (0.9)	231 (1.2)	231 (1.3)	205 (2.7)	199 (3.1)	202 (3.2)	201 (2.2)	194 (2.8)	200 (3.3)
Michigan	223 (1.5)	—	225 (1.3)	188 (3.0)	—	191 (3.9)	198 (2.8)	—	193 (4.8)
Minnesota †	224 (1.1)	222 (1.1)	226 (1.5)	191 (5.9)	173 (8.0)	190 (4.7)	203 (3.5)	202 (4.4)	203 (5.6)
Mississippi	217 (1.4)	220 (2.0)	217 (1.8)	186 (1.6)	187 (2.1)	192 (1.9)	185 (3.7)	181 (3.9)	183 (3.4)
Missouri	226 (1.1)	223 (1.3)	223 (1.4)	196 (3.1)	192 (4.1)	190 (3.6)	202 (3.2)	200 (3.9)	196 (4.5)
Montana †	—	226 (1.3)	230 (1.6)	—	*** (***)	*** (***)	—	208 (3.2)	207 (6.2)
Nevada	—	—	215 (1.4)	—	—	189 (3.1)	—	—	195 (2.0)
New Hampshire †	229 (1.2)	224 (1.5)	227 (1.3)	*** (***)	*** (***)	*** (***)	215 (3.1)	213 (4.8)	201 (5.2)
New Mexico	223 (1.8)	219 (1.7)	222 (1.8)	202 (5.6)	196 (7.0)	183 (7.1)	200 (1.5)	196 (2.2)	199 (1.7)
New York †	226 (1.1)	226 (1.7)	227 (1.2)	202 (2.7)	191 (1.9)	193 (2.8)	187 (4.0)	193 (2.6)	194 (2.8)
North Carolina	221 (1.3)	225 (1.6)	227 (1.4) **	194 (2.2)	193 (1.9)	200 (2.0)	192 (3.5)	189 (4.4)	196 (3.2)
Oklahoma	224 (1.1)	—	225 (1.1)	201 (2.0)	—	192 (5.0)	208 (2.2)	—	207 (2.5)
Oregon	—	—	220 (1.6)	—	—	202 (5.2)	—	—	191 (3.4)
Rhode Island	224 (1.3)	226 (1.4)	227 (1.4)	187 (3.7)	197 (2.4)	197 (3.6)	191 (4.3)	195 (2.8)	185 (5.1)
South Carolina	221 (1.4)	219 (1.4)	223 (1.5)	195 (1.6)	184 (1.7)	197 (1.7) **	195 (2.4)	182 (3.3)	189 (3.9)
Tennessee	219 (1.3)	220 (1.8)	220 (1.6)	193 (2.2)	188 (3.0)	193 (2.4)	196 (4.4)	196 (6.7)	193 (6.1)
Texas	224 (2.1)	227 (1.7)	232 (1.9) *	200 (2.5)	191 (4.4)	197 (3.5)	201 (1.8)	198 (1.9)	204 (2.7)
Utah	223 (1.0)	221 (1.3)	222 (1.2)	*** (***)	*** (***)	*** (***)	204 (2.3)	199 (2.5)	189 (3.0) ***
Virginia	228 (1.5)	224 (1.6)	226 (1.5)	203 (2.1)	192 (1.9)	203 (1.8) **	202 (4.3)	206 (3.4)	198 (4.2)
Washington	—	217 (1.5)	221 (1.4)	—	198 (3.1)	198 (4.4)	—	190 (3.6)	195 (3.4)
West Virginia	217 (1.2)	215 (1.0)	219 (1.4)	204 (6.4)	202 (4.2)	192 (3.0)	196 (6.9)	192 (4.8)	196 (5.1)
Wisconsin †	227 (1.0)	228 (1.1)	230 (1.1)	200 (2.4)	197 (3.5)	193 (2.5)	210 (3.3)	203 (4.3)	208 (2.7)
Wyoming	226 (1.1)	224 (1.2)	222 (1.9)	*** (***)	*** (***)	*** (***)	209 (2.5)	209 (3.1)	207 (3.2)
Other Jurisdictions									
District of Columbia	239 (3.1)	240 (4.1)	231 (5.9)	186 (0.8)	175 (1.0)	180 (1.6) **	177 (2.8)	170 (2.5)	168 (4.3)
DDESS	—	—	230 (2.3)	—	—	209 (1.9)	—	—	211 (3.6)
DoDDS	—	224 (1.2)	229 (1.5)	—	205 (1.9)	212 (3.6)	—	211 (1.7)	216 (4.2)
Virgin Islands	*** (***)	—	*** (***)	174 (1.9)	—	181 (2.0)	157 (4.0)	—	168 (4.1)

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the average scale score in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. ++ Indicates that the average scale score in 1998 was significantly different from that in 1994 using a multiple comparison procedure based on all jurisdictions that participated both years. + Indicates that the average scale score in 1998 was significantly different from that in 1994 if only one jurisdiction or the nation is being examined.

The standard errors of the estimated scale scores appear in parentheses.

— Indicates jurisdiction did not participate. *** (****) Insufficient sample size.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.3 (cont'd)

Average grade 4 reading scale scores by race/ethnicity for public schools only: 1992, 1994, and 1998

	Average scale score Asian/Pacific Islander			Average scale score American Indian		
	1992	1994	1998	1992	1994	1998
Nation	214 (3.6)	227 (4.9)	222 (2.8)	205 (4.9)	200 (3.6)	200 (3.2)
States						
Alabama	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Arizona	*** (***)	*** (***)	*** (***)	185 (3.1)	181 (5.1)	202 (4.3)***
Arkansas	*** (***)	*** (***)	*** (***)	206 (4.8)	*** (***)	*** (***)
California †	212 (3.1)	212 (4.1)	215 (5.1)	*** (***)	*** (***)	*** (***)
Colorado	224 (5.9)	213 (5.4)	228 (6.8)	203 (4.7)	204 (5.2)	*** (***)
Connecticut	*** (***)	*** (***)	244 (4.3)	*** (***)	*** (***)	*** (***)
Delaware	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Florida	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Georgia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Hawaii	203 (1.8)	199 (2.0)	201 (2.3)	*** (***)	*** (***)	183 (5.6)
Iowa †	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Kansas †	—	—	*** (***)	—	—	214 (5.3)
Kentucky	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Louisiana	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Maine	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Maryland	219 (4.1)	232 (4.1)	220 (5.4)	*** (***)	*** (***)	*** (***)
Massachusetts †	218 (6.4)	202 (8.9)	216 (5.5)	*** (***)	*** (***)	*** (***)
Michigan	*** (***)	—	*** (***)	*** (***)	—	*** (***)
Minnesota †	*** (***)	221 (5.4)	216(10.1)	*** (***)	196 (6.7)	*** (***)
Mississippi	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Missouri	*** (***)	*** (***)	*** (***)	*** (***)	212 (4.9)	*** (***)
Montana †	—	*** (***)	*** (***)	—	203 (2.8)	209 (3.9)
Nevada	—	—	216 (3.6)	—	—	199 (5.8)
New Hampshire †	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
New Mexico	*** (***)	*** (***)	*** (***)	200 (3.8)	185 (5.3)	181 (8.6)
New York †	225 (4.2)	228 (5.5)	234 (5.2)	*** (***)	*** (***)	*** (***)
North Carolina	*** (***)	*** (***)	*** (***)	204 (6.2)	201 (4.1)	*** (***)
Oklahoma	*** (***)	—	*** (***)	217 (2.3)	—	214 (2.4)
Oregon	—	—	215 (5.3)	—	—	197 (4.1)
Rhode Island	197 (4.5)	201 (5.3)	211 (6.4)	*** (***)	*** (***)	*** (***)
South Carolina	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Tennessee	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Texas	*** (***)	221 (6.6)	*** (***)	*** (***)	*** (***)	*** (***)
Utah	*** (***)	214 (4.8)	208 (6.5)	*** (***)	195 (5.3)	190 (7.2)
Virginia	226 (5.5)	228 (5.7)	230 (4.3)	*** (***)	*** (***)	*** (***)
Washington	—	216 (4.4)	220 (3.2)	—	207 (4.2)	208 (4.5)
West Virginia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Wisconsin †	*** (***)	*** (***)	*** (***)	206 (5.0)	*** (***)	*** (***)
Wyoming	*** (***)	*** (***)	*** (***)	211 (4.6)	210 (3.3)	205 (6.9)
Other Jurisdictions						
District of Columbia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	—	—	223 (6.6)	—	—	*** (***)
DoDDS	—	218 (2.9)	227 (2.8)	—	210 (4.2)	219 (3.9)
Virgin Islands	*** (***)	—	*** (***)	*** (***)	—	*** (***)

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the average scale score in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the average scale score in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined.

The standard errors of the estimated scale scores appear in parentheses.

— Indicates jurisdiction did not participate. ***(****) Insufficient sample size.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

Table D.4

Percentage of grade 4 students at or above the Proficient level by race/ethnicity for public schools only: 1992, 1994, and 1998

	Percentage at or above Proficient White			Percentage at or above Proficient Black			Percentage at or above Proficient Hispanic		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Nation	33 (1.9)	35 (1.5)	38 (1.2)	8 (1.4)	8 (0.9)	9 (1.0)	14 (1.8)	12 (1.6)	12 (1.3)
States									
Alabama	28 (1.9)	32 (1.5)	34 (2.6)	5 (1.3)	8 (1.1)	8 (1.5)	7 (3.1)	4 (3.1)	7 (3.0)
Arizona	29 (1.7)	32 (1.9)	32 (2.1)	16 (4.2)	10 (3.4)	10 (3.3)	10 (1.5)	13 (1.6)	8 (1.1)*
Arkansas	29 (1.5)	30 (1.7)	29 (1.9)	6 (1.1)	6 (1.2)	7 (1.4)	8 (2.9)	14 (3.3)	10 (3.5)
California†	30 (2.4)	25 (1.9)	29 (2.9)	8 (2.7)	8 (3.7)	7 (2.2)	6 (1.4)	6 (1.5)	8 (1.6)
Colorado	30 (1.6)	35 (1.6)	41 (2.1)**	12 (3.0)	11 (5.7)	17 (4.1)	13 (1.7)	12 (1.8)	15 (2.1)
Connecticut	42 (1.7)	48 (1.8)	55 (2.5)**	9 (2.0)	9 (2.5)	13 (2.9)	8 (1.6)	14 (3.0)	17 (2.6)*
Delaware	32 (1.4)	30 (1.5)	31 (1.9)	9 (1.9)	10 (2.1)	12 (2.1)	7 (2.9)	10 (2.4)	11 (2.8)
Florida	29 (1.6)	31 (2.0)	32 (1.7)	7 (1.6)	7 (1.7)	9 (1.4)	14 (2.1)	13 (1.8)	17 (2.6)
Georgia	34 (1.9)	36 (2.4)	38 (3.0)	9 (1.3)	10 (2.0)	9 (1.3)	15 (3.6)	13 (2.9)	12 (3.3)
Hawaii	26 (3.4)	34 (2.5)	25 (2.2)	10 (3.7)	10 (4.0)	13 (3.6)	11 (2.6)	13 (2.8)	9 (2.3)
Iowa†	38 (1.6)	37 (1.4)	37 (1.8)	17 (4.8)	7 (4.1)	7 (2.5)	17 (4.0)	16 (3.1)	22 (5.3)
Kansas†	—	—	39 (2.3)	—	—	14 (2.7)	—	—	20 (3.9)
Kentucky	25 (1.7)	28 (1.9)	32 (1.7)*	8 (3.2)	12 (3.5)	11 (2.7)	13 (4.9)	11 (5.0)	11 (4.4)
Louisiana	23 (1.6)	25 (1.8)	31 (2.3)*	6 (1.0)	4 (0.8)	6 (1.0)	7 (2.7)	6 (2.4)	9 (3.5)
Maine	37 (1.7)	42 (1.5)	38 (1.7)	*** (***)	*** (***)	*** (***)	14 (4.7)	25 (6.2)	17 (7.6)
Maryland	32 (1.7)	37 (2.0)	40 (2.7)*	9 (1.3)	8 (1.3)	11 (1.4)	12 (2.8)	12 (4.3)	18 (4.3)
Massachusetts†	41 (1.7)	42 (1.9)	43 (2.3)	10 (3.2)	13 (2.3)	12 (4.0)	11 (2.5)	10 (2.1)	14 (3.2)
Michigan	32 (2.3)	—	34 (1.7)	6 (1.9)	—	8 (2.3)	11 (3.1)	—	11 (2.6)
Minnesota†	34 (1.5)	35 (1.6)	39 (1.9)	5 (2.8)	9 (3.8)	13 (3.0)	14 (4.4)	21 (4.1)	19 (3.8)
Mississippi	26 (1.9)	31 (2.3)	27 (1.6)	5 (0.6)	7 (1.2)	8 (1.4)	3 (2.2)	6 (2.1)	4 (2.5)
Missouri	35 (1.5)	35 (1.6)	34 (1.7)	9 (2.1)	12 (3.1)	8 (2.1)	12 (2.9)	17 (3.9)	15 (3.2)
Montana†	—	39 (1.5)	41 (2.5)	—	*** (***)	*** (***)	—	20 (2.8)	19 (5.5)
Nevada	—	—	27 (1.8)	—	—	6 (1.9)	—	—	12 (1.8)
New Hampshire†	39 (1.6)	37 (1.5)	40 (1.7)	*** (***)	*** (***)	*** (***)	25 (5.0)	21 (6.6)	11 (5.2)
New Mexico	35 (2.8)	30 (2.3)	35 (2.4)	12 (7.8)	11 (5.4)	6 (3.6)	13 (1.1)	15 (1.5)	14 (1.4)
New York†	36 (1.8)	39 (2.2)	39 (1.8)	12 (2.6)	9 (1.5)	9 (1.9)	9 (1.7)	13 (1.8)	11 (1.9)
North Carolina	33 (1.8)	39 (2.0)	37 (1.8)	9 (1.8)	11 (1.5)	11 (1.6)	14 (3.8)	11 (3.1)	13 (3.2)
Oklahoma	33 (1.6)	—	36 (2.0)	10 (2.1)	—	9 (2.6)	15 (3.0)	—	14 (2.5)
Oregon	—	—	33 (1.6)	—	—	10 (4.8)	—	—	11 (2.1)
Rhode Island	33 (1.9)	37 (1.6)	38 (1.8)	7 (2.5)	11 (2.7)	12 (2.4)	9 (1.9)	12 (2.9)	8 (2.0)
South Carolina	32 (1.7)	31 (1.8)	33 (1.8)	7 (1.2)	6 (1.1)	10 (1.5)	11 (3.5)	8 (2.4)	10 (3.0)
Tennessee	29 (1.7)	32 (1.7)	31 (1.6)	8 (1.2)	9 (2.7)	10 (2.0)	14 (4.3)	12 (5.4)	15 (3.9)
Texas	35 (2.4)	38 (2.2)	43 (3.0)	8 (1.6)	10 (2.6)	11 (2.0)	12 (1.9)	13 (1.4)	15 (1.4)
Utah	32 (1.7)	33 (1.7)	32 (1.6)	*** (***)	*** (***)	*** (***)	14 (3.1)	15 (2.7)	9 (2.4)
Virginia	40 (2.0)	35 (2.1)	38 (2.2)	12 (2.0)	8 (1.4)	13 (2.0)	12 (3.3)	20 (3.2)	13 (3.6)
Washington	—	31 (1.5)	33 (1.7)	—	11 (3.6)	13 (4.6)	—	9 (2.2)	12 (2.9)
West Virginia	26 (1.4)	28 (1.4)	31 (1.7)	12 (5.5)	13 (2.9)	6 (2.5)	16 (5.3)	11 (3.9)	14 (3.5)
Wisconsin†	37 (1.5)	39 (1.7)	39 (1.8)	10 (2.5)	9 (2.5)	7 (2.4)	17 (2.7)	14 (3.5)	16 (3.4)
Wyoming	36 (1.7)	35 (1.4)	33 (2.2)	*** (***)	*** (***)	*** (***)	17 (2.3)	20 (2.6)	18 (2.8)
Other Jurisdictions									
District of Columbia	55 (5.3)	57 (4.1)	52 (5.7)	7 (0.7)	5 (0.8)	7 (1.3)	7 (2.2)	6 (1.6)	6 (1.7)
DDESS	—	—	42 (2.0)	—	—	20 (2.0)	—	—	24 (3.9)
DoDDS	—	36 (1.7)	41 (2.3)	—	14 (2.1)	20 (4.8)	—	22 (2.5)	25 (3.9)
Virgin Islands	*** (***)	—	*** (***)	3 (0.7)	—	8 (1.5)*	2 (1.5)	—	6 (1.7)

** Indicates that the percentage in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the percentage in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the percentage in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined.

The standard errors of the estimated percentages appear in parentheses.

— Indicates jurisdiction did not participate. ***(***) Insufficient sample size.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994 and 1998 Reading Assessments.

Table D.4 (co

Percentage of grade 4 students at or above the Proficient level by race/ethnicity for public schools only: 1992, 1994, and 1998

	Percentage at or above Proficient Asian/Pacific Islander			Percentage at or above Proficient American Indian		
	1992	1994	1998	1992	1994	1998
Nation	24 (5.0)	42 (6.0)	34 (4.4)	16 (4.5)	18 (4.2)	12 (3.8)
States						
Alabama	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Arizona	*** (***)	*** (***)	*** (***)	6 (1.8)	10 (2.8)	15 (3.8)
Arkansas	*** (***)	*** (***)	*** (***)	16 (5.5)	*** (***)	*** (***)
California †	24 (2.8)	29 (4.4)	31 (4.1)	*** (***)	*** (***)	*** (***)
Colorado	37 (7.6)	27 (7.9)	40 (8.5)	16 (5.6)	22 (5.0)	*** (***)
Connecticut	*** (***)	*** (***)	61 (8.8)	*** (***)	*** (***)	*** (***)
Delaware	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Florida	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Georgia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Hawaii	16 (1.6)	17 (1.6)	17 (1.4)	*** (***)	*** (***)	9 (3.9)
Iowa †	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Kansas †	—	—	*** (***)	—	—	22 (5.4)
Kentucky	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Louisiana	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Maine	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Maryland	36 (5.3)	49 (6.1)	41 (7.9)	*** (***)	*** (***)	*** (***)
Massachusetts †	27 (10.2)	17 (6.3)	26 (6.1)	*** (***)	*** (***)	*** (***)
Michigan	*** (***)	—	*** (***)	*** (***)	—	*** (***)
Minnesota	*** (***)	36 (7.4)	38 (9.4)	*** (***)	15 (5.5)	*** (***)
Mississippi	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Missouri	*** (***)	*** (***)	*** (***)	*** (***)	22 (5.9)	*** (***)
Montana †	—	*** (***)	*** (***)	—	17 (3.7)	19 (4.7)
Nevada	—	—	27 (6.1)	—	—	12 (4.5)
New Hampshire †	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
New Mexico	*** (***)	*** (***)	*** (***)	9 (4.9)	8 (2.9)	9 (2.5)
New York †	34 (6.3)	42 (7.1)	50 (10.0)	*** (***)	*** (***)	*** (***)
North Carolina	*** (***)	*** (***)	*** (***)	19 (5.6)	11 (5.9)	*** (***)
Oklahoma	*** (***)	—	*** (***)	26 (4.0)	—	22 (3.6)
Oregon	—	—	25 (5.5)	—	—	9 (4.2)
Rhode Island	16 (4.5)	17 (6.0)	24 (5.9)	*** (***)	*** (***)	*** (***)
South Carolina	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Tennessee	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Texas	*** (***)	36 (8.8)	*** (***)	*** (***)	*** (***)	*** (***)
Utah	*** (***)	25 (6.9)	22 (5.8)	*** (***)	9 (4.3)	10 (6.2)
Virginia	39 (9.0)	42 (7.7)	38 (6.7)	*** (***)	*** (***)	*** (***)
Washington	—	28 (5.2)	31 (4.4)	—	20 (5.0)	19 (3.6)
West Virginia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
Wisconsin †	*** (***)	*** (***)	*** (***)	16 (6.4)	*** (***)	*** (***)
Wyoming	*** (***)	*** (***)	*** (***)	17 (5.0)	20 (5.0)	16 (4.1)
Other Jurisdictions						
District of Columbia	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	—	—	32 (7.8)	—	—	*** (***)
DoDDS	—	29 (3.6)	36 (3.4)	—	17 (4.8)	27 (5.7)
Virgin Islands	*** (***)	—	*** (***)	*** (***)	—	*** (***)

The standard errors of the estimated percentages appear in parentheses.
— Indicates jurisdiction did not participate. *** (***) Insufficient sample size.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.5

Average grade 8 reading scale scores by parents' highest education level for public schools only: 1998

	Average scale score				
	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college	I don't know
Nation	242 (1.9)	253 (1.3)	268 (1.4)	272 (1.0)	241 (2.0)
States					
Alabama	252 (2.9)	246 (1.6)	262 (2.0)	264 (2.0)	240 (2.9)
Arizona	243 (2.3)	253 (2.5)	267 (1.5)	272 (1.4)	242 (2.3)
Arkansas	243 (3.1)	249 (1.9)	265 (2.4)	264 (1.7)	241 (2.6)
California †	238 (3.1)	244 (2.2)	264 (2.3)	266 (1.8)	230 (3.0)
Colorado	240 (4.7)	251 (2.1)	266 (1.8)	274 (1.2)	244 (2.8)
Connecticut	251 (3.0)	256 (1.7)	274 (1.5)	282 (1.0)	250 (3.6)
Delaware	234 (8.2)	251 (2.5)	257 (2.4)	266 (1.7)	232 (7.6)
Florida	245 (3.1)	244 (2.5)	262 (1.8)	261 (2.0)	235 (3.1)
Georgia	242 (2.9)	247 (2.2)	264 (1.7)	267 (1.9)	240 (3.6)
Hawaii	230 (5.1)	241 (2.3)	258 (2.1)	259 (1.5)	236 (3.2)
Kansas †	249 (6.3)	261 (2.1)	269 (1.9)	276 (1.8)	251 (3.5)
Kentucky	246 (3.1)	256 (1.6)	268 (1.9)	274 (2.0)	240 (2.5)
Louisiana	247 (4.1)	245 (1.4)	261 (1.5)	258 (2.2)	236 (3.1)
Maine	262 (4.8)	260 (2.1)	275 (2.0)	282 (1.4)	252 (4.6)
Maryland †	253 (3.5)	250 (2.0)	262 (2.3)	272 (2.2)	237 (4.6)
Massachusetts	242 (4.3)	256 (2.1)	273 (2.4)	278 (1.7)	253 (3.6)
Minnesota †	244 (4.9)	256 (2.2)	273 (1.9)	276 (1.4)	240 (3.9)
Mississippi	239 (2.5)	243 (2.5)	257 (2.8)	259 (1.6)	239 (2.4)
Missouri	247 (3.3)	257 (1.7)	268 (1.7)	271 (1.6)	243 (2.8)
Montana	253 (5.3)	258 (2.7)	273 (2.3)	277 (1.4)	251 (4.6)
Nevada	241 (3.5)	248 (1.8)	265 (1.9)	269 (1.5)	238 (2.6)
New Mexico	240 (3.0)	251 (1.7)	263 (2.6)	268 (1.4)	242 (3.9)
New York †	252 (3.3)	256 (2.2)	270 (2.0)	277 (1.8)	248 (3.0)
North Carolina	246 (3.6)	250 (1.9)	268 (1.6)	273 (1.4)	251 (3.0)
Oklahoma	256 (3.4)	255 (1.8)	270 (2.2)	274 (1.4)	252 (2.3)
Oregon	241 (3.5)	259 (2.4)	266 (1.6)	276 (1.8)	243 (3.3)
Rhode Island	241 (4.7)	253 (3.0)	265 (2.4)	273 (1.5)	249 (3.6)
South Carolina	245 (2.9)	243 (1.6)	264 (2.0)	264 (1.6)	235 (3.3)
Tennessee	246 (3.7)	250 (1.5)	265 (1.7)	269 (1.8)	242 (4.1)
Texas	247 (2.4)	256 (1.7)	269 (1.9)	272 (1.7)	244 (3.0)
Utah	247 (5.1)	251 (2.3)	265 (2.0)	273 (0.9)	243 (3.4)
Virginia	248 (3.4)	254 (1.5)	269 (2.2)	277 (1.3)	250 (3.5)
Washington	243 (3.7)	258 (2.2)	268 (1.7)	274 (1.7)	244 (3.1)
West Virginia	248 (2.7)	254 (1.9)	265 (1.9)	272 (1.6)	249 (4.3)
Wisconsin †	240 (4.4)	260 (2.4)	269 (2.1)	276 (1.9)	253 (4.2)
Wyoming	256 (4.3)	256 (2.5)	266 (2.2)	267 (1.9)	246 (2.7)
Other Jurisdictions					
District of Columbia	235 (5.1)	227 (3.9)	242 (3.1)	248 (3.3)	226 (3.7)
DDESS	*** (***)	265 (8.8)	271 (3.6)	271 (3.8)	*** (***)
DoDDS	*** (***)	258 (3.5)	272 (2.1)	275 (1.5)	253 (4.4)
Virgin Islands	237 (4.7)	234 (4.9)	242 (7.6)	232 (4.3)	221 (9.4)

The standard errors of the estimated scale scores appear in parentheses.
***(***) Insufficient sample size.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.6

Percentage of grade 8 students at or above the Proficient level by parents' highest education level for public schools only: 1998

	Percentage at or above Proficient				
	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college	I don't know
Nation	11 (1.5)	21 (1.3)	35 (2.1)	42 (1.5)	12 (1.2)
States					
Alabama	17 (2.8)	14 (1.6)	25 (2.2)	30 (2.4)	8 (2.6)
Arizona	9 (2.7)	20 (3.0)	31 (3.4)	39 (2.1)	11 (2.2)
Arkansas	12 (2.7)	18 (2.2)	29 (2.9)	32 (2.3)	11 (2.4)
California †	7 (2.1)	11 (2.1)	27 (3.4)	34 (2.8)	5 (1.2)
Colorado	9 (2.8)	15 (2.2)	31 (2.9)	42 (2.3)	12 (3.2)
Connecticut	16 (4.6)	21 (2.6)	44 (2.8)	54 (1.7)	18 (3.7)
Delaware	8 (4.4)	19 (2.3)	23 (2.8)	35 (2.7)	10 (2.9)
Florida	12 (3.3)	13 (1.9)	29 (2.4)	31 (2.7)	8 (2.9)
Georgia	10 (2.7)	15 (2.2)	27 (3.0)	35 (2.6)	11 (3.1)
Hawaii	7 (3.8)	10 (1.9)	23 (2.8)	27 (2.2)	11 (1.9)
Kansas †	15 (7.2)	22 (2.4)	36 (3.0)	47 (2.4)	20 (4.5)
Kentucky	15 (2.4)	20 (2.3)	34 (2.9)	44 (3.5)	12 (2.9)
Louisiana	11 (2.7)	11 (1.2)	26 (2.6)	24 (2.5)	6 (2.7)
Maine	31 (7.3)	25 (3.0)	45 (3.1)	54 (2.4)	15 (5.1)
Maryland †	19 (5.1)	17 (2.4)	29 (3.3)	44 (2.7)	10 (3.7)
Massachusetts	12 (3.8)	20 (2.8)	39 (4.3)	48 (3.0)	18 (4.0)
Minnesota †	11 (3.3)	21 (2.9)	43 (3.5)	47 (2.6)	12 (3.8)
Mississippi	9 (2.5)	13 (1.4)	22 (2.4)	26 (2.3)	10 (2.6)
Missouri	10 (4.2)	21 (2.2)	35 (2.5)	39 (2.2)	9 (2.2)
Montana †	19 (7.7)	21 (3.5)	42 (3.5)	47 (2.4)	19 (6.2)
Nevada	11 (4.2)	12 (2.0)	30 (2.4)	38 (2.3)	7 (2.2)
New Mexico	9 (2.5)	16 (2.3)	28 (4.3)	35 (2.1)	10 (3.6)
New York †	17 (5.0)	19 (2.7)	36 (4.4)	47 (2.8)	14 (4.8)
North Carolina	13 (2.9)	16 (1.6)	33 (3.0)	43 (2.2)	18 (3.0)
Oklahoma	19 (4.0)	16 (2.2)	34 (3.7)	39 (2.9)	13 (2.8)
Oregon	9 (2.7)	23 (3.8)	33 (2.6)	46 (2.6)	9 (3.3)
Rhode Island	12 (2.5)	19 (3.1)	31 (4.3)	41 (1.8)	17 (3.7)
South Carolina	12 (3.0)	10 (1.5)	27 (3.1)	32 (2.3)	7 (2.9)
Tennessee	13 (3.7)	14 (1.7)	30 (3.0)	38 (2.5)	10 (3.7)
Texas	12 (2.8)	19 (2.2)	36 (3.0)	39 (3.1)	10 (1.9)
Utah	13 (3.9)	14 (2.8)	31 (3.4)	40 (1.5)	11 (4.5)
Virginia	13 (3.3)	16 (2.2)	35 (3.8)	47 (2.4)	14 (3.7)
Washington	11 (4.3)	20 (2.5)	33 (2.4)	42 (2.5)	14 (3.4)
West Virginia	14 (3.3)	19 (1.8)	28 (2.9)	40 (2.4)	16 (4.3)
Wisconsin †	9 (3.6)	24 (3.0)	34 (2.7)	46 (3.5)	15 (5.7)
Wyoming	23 (5.7)	20 (2.9)	35 (3.7)	34 (2.4)	16 (3.1)
Other Jurisdictions					
District of Columbia	8 (4.5)	5 (1.4)	12 (2.1)	21 (2.8)	6 (2.7)
DDESS	*** (***)	32 (11.2)	40 (3.7)	39 (4.3)	*** (***)
DoDDS	*** (***)	23 (3.8)	39 (3.8)	43 (3.5)	18 (4.4)
Virgin Islands	12 (5.1)	8 (4.1)	13 (5.5)	10 (3.0)	6 (4.0)

The standard errors of the estimated percentages appear in parentheses.
*** (***) Insufficient sample size.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table D.77

Average grade 4 reading scale scores by type of location for public schools only: 1992, 1994, and 1998

	Average scale score Central city			Average scale score Urban fringe/large town			Average scale score Rural/small town		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Nation	207 (1.5)	203 (2.4)	208 (1.8)	219 (2.2)	219 (1.9)	220 (1.8)	218 (2.4)	213 (1.8)	218 (1.2)
States									
Alabama	206 (3.4)	205 (3.0)	208 (4.0)	213 (3.2)	216 (3.0)	218 (3.4)	204 (2.4)	206 (1.7)	209 (2.2)
Arizona	213 (1.1)	207 (2.3)	208 (3.3)	210 (3.1)	207 (3.4)	210 (2.3)	199 (4.5)	199 (5.6)	197 (6.4)
Arkansas	209 (4.0)	207 (3.8)	199 (3.9)	215 (2.3)	212 (4.1)	218 (3.2)	211 (1.5)	208 (1.8)	210 (1.6)
California †	200 (2.8)	190 (3.6)	193 (6.6)	203 (3.5)	202 (2.3)	208 (3.3)	205 (12.5)	*** (***)	206 (5.8)
Colorado	211 (2.0)	209 (2.5)	221 (2.7) *+	220 (1.7)	216 (2.3)	221 (1.8)	218 (2.7)	217 (2.5)	224 (3.0)
Connecticut	204 (3.8)	204 (4.3)	209 (3.4)	228 (2.1)	228 (1.6)	235 (2.4) *	231 (1.7)	238 (2.5)	241 (2.2) **
Delaware	213 (0.9)	207 (1.2)	212 (1.7)	213 (1.1)	206 (2.3)	211 (2.1)	212 (1.3)	206 (2.5)	214 (3.0)
Florida	202 (3.5)	199 (3.3)	208 (2.5)	212 (1.6)	210 (2.5)	207 (2.0)	209 (2.2)	198 (4.3)	205 (5.0)
Georgia	203 (3.9)	195 (5.7)	196 (4.1)	219 (2.3)	213 (4.8)	217 (2.5)	211 (1.8)	206 (2.6)	207 (3.1)
Hawaii	209 (3.2)	210 (3.9)	210 (3.4)	199 (2.8)	198 (2.0)	196 (2.4)	204 (2.1)	197 (2.5)	195 (3.2)
Iowa †	224 (2.2)	218 (3.8)	216 (2.3) *	231 (2.1)	222 (4.0)	231 (3.5)	224 (1.3)	225 (1.3)	224 (1.5)
Kansas †	—	—	216 (3.2)	—	—	233 (2.4)	—	—	222 (1.8)
Kentucky	215 (3.4)	214 (4.9)	216 (3.4)	217 (3.5)	216 (4.3)	221 (2.3)	210 (1.3)	209 (1.7)	217 (2.0) *+
Louisiana	200 (2.8)	190 (2.7)	197 (3.0)	207 (1.9)	203 (3.1)	211 (2.9)	204 (1.9)	197 (2.7)	206 (1.9) +
Maine	225 (2.6)	227 (4.4)	226 (5.1)	228 (3.8)	228 (3.5)	229 (3.8)	227 (1.3)	229 (1.4)	225 (1.4)
Maryland	200 (4.4)	200 (3.8)	199 (4.5)	216 (1.7)	216 (1.8)	218 (2.0)	202 (4.6)	199 (5.0)	221 (3.4) *+
Massachusetts †	208 (2.0)	201 (3.3)	208 (3.0)	232 (1.3)	231 (1.5)	231 (1.9)	232 (1.8)	230 (2.7)	231 (1.9)
Michigan	205 (4.7)	—	198 (4.0)	219 (1.7)	—	224 (2.0)	222 (1.9)	—	222 (2.0)
Minnesota	212 (4.0)	207 (6.6)	207 (5.0)	224 (1.6)	224 (1.6)	229 (2.2)	220 (1.8)	215 (2.0)	220 (2.1)
Mississippi	198 (3.5)	204 (3.7)	204 (3.7)	208 (3.5)	213 (4.2)	211 (3.8)	197 (1.8)	198 (2.0)	202 (1.9)
Missouri	209 (4.0)	212 (4.4)	198 (5.1)	223 (2.1)	221 (2.2)	223 (2.4)	222 (1.2)	217 (1.6)	219 (2.3)
Montana †	—	218 (3.1)	224 (4.0)	—	224 (4.2)	225 (4.0)	—	223 (1.7)	227 (1.8)
Nevada	—	—	206 (1.6)	—	—	210 (2.5)	—	—	211 (4.3)
New Hampshire †	229 (2.1)	220 (2.9)	228 (3.6)	229 (2.3)	226 (2.3)	225 (2.4)	226 (1.8)	222 (2.4)	225 (1.9)
New Mexico	214 (2.1)	205 (3.3)	213 (2.4)	210 (3.1)	206 (3.1)	209 (3.4)	208 (2.1)	202 (3.1)	198 (3.7)
New York †	199 (3.0)	194 (2.7)	203 (2.5)	225 (1.5)	224 (1.7)	227 (2.6)	225 (2.4)	227 (4.1)	225 (2.0)
North Carolina	214 (3.0)	218 (2.9)	220 (2.6)	212 (2.4)	213 (2.9)	219 (2.5)	209 (1.7)	211 (2.2)	214 (2.2)
Oklahoma	218 (1.9)	—	216 (3.5)	223 (1.9)	—	224 (1.8)	220 (1.5)	—	218 (1.0)
Oregon	—	—	211 (3.1)	—	—	218 (2.6)	—	—	213 (2.5)
Rhode Island	205 (2.5)	211 (1.7)	202 (2.7) +	221 (3.1)	223 (1.8)	227 (2.6)	231 (2.5)	229 (3.1)	229 (1.5)
South Carolina	209 (2.8)	208 (2.9)	214 (2.2)	218 (2.2)	211 (2.7)	216 (1.8)	205 (1.9)	196 (2.8)	205 (2.3) +
Tennessee	208 (2.7)	207 (4.0)	205 (2.6)	218 (2.7)	218 (2.2)	224 (3.2)	213 (1.9)	213 (2.3)	214 (2.5)
Texas	209 (2.5)	208 (3.1)	209 (3.2)	219 (2.7)	219 (3.6)	225 (3.6)	209 (4.6)	211 (3.4)	222 (2.6) +
Utah	219 (2.5)	215 (3.5)	214 (2.2)	220 (1.5)	219 (1.5)	218 (2.0)	222 (1.6)	217 (2.8)	212 (2.6) *
Virginia	217 (2.3)	208 (2.2)	215 (2.9)	227 (2.3)	221 (2.4)	222 (2.0)	214 (2.0)	208 (2.4)	218 (2.1) +
Washington	—	210 (3.4)	215 (2.8)	—	215 (1.9)	223 (1.9) +	—	210 (3.7)	212 (2.7)
West Virginia	216 (4.3)	213 (2.8)	223 (5.0)	218 (2.2)	214 (2.3)	220 (3.7)	214 (1.8)	213 (1.3)	214 (1.8)
Wisconsin †	222 (2.1)	221 (2.4)	216 (2.6)	225 (1.6)	226 (1.7)	231 (1.9)	224 (1.8)	226 (1.5)	227 (1.5)
Wyoming	221 (3.0)	221 (2.7)	218 (3.0)	224 (7.9)	218 (5.7)	218 (6.1)	224 (1.1)	222 (1.4)	219 (1.8)
Other Jurisdictions									
District of Columbia	188 (0.8)	179 (0.9)	182 (1.4) **	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	—	—	220 (2.3)	—	—	222 (2.7)	—	—	219 (3.0)
DoDDS	—	*** (***)	*** (***)	—	*** (***)	*** (***)	—	*** (***)	*** (***)
Virgin Islands	*** (***)	—	*** (***)	*** (***)	—	*** (***)	171 (1.7)	—	178 (1.9) *

** Indicates that the average scale score in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the average scale score in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the average scale score in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined.

The standard errors of the estimated scale scores appear in parentheses.

— Indicates jurisdiction did not participate. ***(***) Insufficient sample size.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.8

Percentage of grade 4 students at or above the Proficient level by type of location for public schools only: 1992, 1994, and 1998

	Percentage at or above Proficient Central city			Percentage at or above Proficient Urban fringe/large town			Percentage at or above Proficient Rural/small town		
	1992	1994	1998	1992	1994	1998	1992	1994	1998
Nation	20 (1.4)	22 (2.0)	22 (1.9)	31 (2.7)	33 (2.0)	35 (1.8)	28 (2.6)	27 (2.0)	30 (2.2)
States									
Alabama	20 (2.4)	23 (2.5)	23 (3.9)	24 (2.9)	30 (2.9)	31 (4.2)	17 (2.3)	20 (1.5)	21 (2.1)
Arizona	23 (1.6)	25 (1.8)	24 (2.2)	19 (2.2)	24 (3.1)	21 (2.4)	15 (3.0)	21 (3.5)	17 (5.2)
Arkansas	22 (4.3)	23 (2.8)	19 (3.1)	27 (2.7)	28 (3.8)	30 (4.1)	22 (1.3)	23 (1.7)	23 (1.9)
California †	19 (2.5)	14 (2.2)	16 (3.3)	20 (2.8)	21 (1.8)	23 (2.6)	22 (10.7)	*** (***)	18 (5.8)
Colorado	19 (1.9)	26 (2.4)	35 (3.1) **	29 (2.2)	29 (2.5)	32 (2.5)	26 (3.2)	29 (2.9)	36 (3.9)
Connecticut	19 (3.1)	25 (3.3)	21 (2.9)	40 (2.6)	40 (1.9)	49 (3.6)	40 (2.8)	53 (3.7)	57 (3.7) **
Delaware	25 (1.4)	24 (1.5)	24 (2.4)	24 (2.3)	23 (1.8)	25 (2.5)	22 (1.3)	20 (1.4)	25 (3.0)
Florida	18 (2.4)	18 (2.2)	24 (2.2)	24 (1.6)	27 (2.2)	22 (1.9)	20 (3.1)	17 (3.9)	21 (3.1)
Georgia	17 (3.4)	19 (4.3)	14 (3.7)	31 (2.8)	31 (3.5)	30 (3.1)	23 (2.0)	22 (2.9)	21 (2.7)
Hawaii	21 (2.8)	25 (3.2)	25 (2.7)	14 (2.3)	17 (1.4)	14 (1.5)	17 (1.7)	17 (1.9)	15 (1.9)
Iowa †	34 (3.3)	30 (3.9)	28 (2.5)	43 (3.8)	34 (4.5)	43 (5.1)	35 (1.8)	36 (1.5)	35 (2.0)
Kansas †	—	—	32 (3.2)	—	—	43 (3.6)	—	—	32 (2.5)
Kentucky	27 (3.8)	31 (4.7)	28 (3.2)	28 (4.9)	29 (4.9)	33 (4.0)	19 (1.4)	22 (1.4)	28 (2.0) **
Louisiana	15 (2.4)	13 (1.9)	17 (2.9)	16 (2.0)	18 (2.3)	22 (2.7)	15 (1.7)	13 (2.0)	18 (1.9)
Maine	33 (5.2)	39 (6.6)	39 (6.9)	37 (6.4)	39 (3.5)	41 (4.2)	36 (2.1)	41 (1.5)	35 (2.0) +
Maryland	14 (2.4)	20 (3.9)	19 (3.5)	29 (1.5)	30 (1.9)	30 (2.4)	13 (3.1)	16 (2.8)	33 (4.4) **+
Massachusetts †	17 (2.3)	16 (2.5)	19 (2.8)	42 (2.4)	43 (2.0)	42 (2.8)	42 (3.1)	41 (4.8)	43 (4.1)
Michigan	21 (5.0)	—	17 (3.3)	27 (2.4)	—	34 (2.6)	29 (2.9)	—	30 (2.7)
Minnesota †	25 (4.2)	28 (4.2)	29 (4.0)	34 (2.1)	37 (2.4)	43 (2.4)	29 (2.3)	29 (1.8)	30 (2.6)
Mississippi	11 (2.1)	18 (3.4)	18 (2.4)	19 (3.4)	27 (4.3)	24 (2.7)	12 (1.1)	15 (1.4)	15 (1.5)
Missouri	24 (3.9)	30 (4.4)	19 (3.4)	32 (3.0)	32 (2.8)	34 (2.9)	31 (1.8)	30 (2.1)	29 (2.7)
Montana †	—	29 (2.5)	35 (4.8)	—	34 (6.5)	36 (4.8)	—	37 (1.9)	38 (2.7)
Nevada	—	—	20 (1.5)	—	—	24 (3.0)	—	—	23 (4.6)
New Hampshire †	39 (3.2)	32 (3.6)	42 (4.3)	39 (3.1)	38 (2.6)	38 (4.1)	37 (2.6)	35 (2.8)	37 (2.2)
New Mexico	26 (2.6)	23 (2.5)	27 (2.4)	24 (3.1)	21 (3.3)	23 (3.8)	19 (2.5)	18 (2.4)	16 (1.9)
New York †	16 (2.2)	15 (1.9)	19 (2.2)	35 (2.1)	37 (2.0)	39 (3.3)	32 (3.4)	37 (6.3)	35 (3.6)
North Carolina	27 (3.0)	34 (2.8)	30 (3.2)	26 (2.5)	28 (3.1)	29 (2.8)	22 (1.8)	27 (2.3)	25 (2.3)
Oklahoma	27 (2.2)	—	29 (3.2)	33 (2.8)	—	34 (2.8)	28 (1.9)	—	27 (1.8)
Oregon	—	—	25 (2.7)	—	—	31 (2.5)	—	—	26 (2.1)
Rhode Island	19 (2.4)	24 (2.1)	19 (2.6)	30 (3.2)	36 (2.3)	39 (2.5)	41 (3.9)	39 (2.9)	39 (3.3)
South Carolina	21 (2.9)	23 (2.9)	25 (2.1)	29 (2.5)	24 (2.3)	26 (2.0)	18 (2.0)	15 (2.0)	18 (2.1)
Tennessee	21 (2.8)	25 (3.4)	21 (2.3)	28 (3.3)	29 (2.6)	35 (3.4)	21 (1.8)	26 (2.0)	25 (2.2)
Texas	20 (2.9)	23 (3.0)	22 (2.5)	29 (3.1)	32 (3.6)	36 (4.6)	22 (4.7)	24 (3.7)	34 (3.8)
Utah	29 (3.3)	31 (3.0)	28 (2.0)	30 (2.0)	30 (2.1)	29 (2.5)	31 (3.0)	29 (3.4)	24 (2.2)
Virginia	28 (2.7)	22 (2.4)	26 (3.3)	39 (2.9)	33 (2.7)	34 (2.5)	23 (2.0)	21 (2.0)	28 (2.8)
Washington	—	25 (2.6)	28 (2.7)	—	28 (1.8)	34 (2.6)	—	26 (3.5)	24 (2.0)
West Virginia	25 (5.2)	28 (3.2)	35 (6.1)	28 (2.7)	28 (2.8)	33 (4.1)	24 (1.8)	25 (1.5)	26 (1.7)
Wisconsin †	32 (2.8)	33 (2.9)	28 (2.8)	35 (2.6)	37 (3.1)	42 (3.1)	34 (2.3)	36 (2.3)	35 (2.5)
Wyoming	30 (3.8)	31 (2.9)	30 (4.0)	35 (6.5)	31 (6.0)	29 (6.3)	34 (1.5)	32 (1.5)	30 (2.0)
Other Jurisdictions									
District of Columbia	10 (0.6)	8 (0.7)	10 (1.1)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)	*** (***)
DDESS	—	—	31 (2.6)	—	—	34 (3.5)	—	—	31 (2.8)
DoDDS	—	*** (***)	*** (***)	—	*** (***)	*** (***)	—	*** (***)	*** (***)
Virgin Islands	*** (***)	—	*** (***)	*** (***)	—	*** (***)	3 (0.7)	—	8 (1.3) **

** Indicates that the percentage in 1998 was significantly different from that in 1992 using a multiple comparison procedure based on all jurisdictions that participated both years. * Indicates that the percentage in 1998 was significantly different from that in 1992 if only one jurisdiction is being examined. + Indicates that the percentage in 1998 was significantly different from that in 1994 if only one jurisdiction is being examined.

The standard errors of the estimated percentages appear in parentheses.

— Indicates jurisdiction did not participate. ***(***) Insufficient sample size.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples. Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, and 1998 Reading Assessments.

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Table D.9

Average grade 8 reading scale scores by type of location for public schools only: 1998

	Average scale score		
	Central city	Urban fringe/ large town	Rural/ small town
Nation	254 (1.7)	266 (1.4)	263 (1.5)
States			
Alabama	254 (3.4)	260 (2.3)	254 (1.9)
Arizona	261 (1.7)	267 (2.3)	250 (2.5)
Arkansas	253 (3.1)	262 (2.9)	255 (1.6)
California †	249 (2.5)	255 (2.3)	*** (***)
Colorado	258 (2.6)	268 (1.2)	264 (2.1)
Connecticut	252 (2.9)	275 (1.4)	280 (1.7)
Delaware	254 (2.7)	256 (2.3)	258 (2.5)
Florida	252 (2.5)	256 (2.0)	247 (7.4)
Georgia	245 (3.1)	263 (1.8)	254 (2.5)
Hawaii	253 (2.6)	250 (1.5)	247 (2.0)
Kansas †	260 (3.7)	273 (1.9)	269 (1.6)
Kentucky	261 (4.7)	266 (2.4)	261 (1.3)
Louisiana	247 (3.3)	253 (2.8)	255 (1.7)
Maine	279 (3.0)	272 (3.8)	272 (1.3)
Maryland †	246 (4.3)	264 (2.3)	268 (2.3)
Massachusetts	254 (3.3)	275 (2.4)	274 (2.4)
Minnesota †	249 (5.2)	273 (1.4)	266 (2.3)
Mississippi	243 (4.8)	255 (2.1)	250 (1.8)
Missouri	257 (4.0)	263 (2.0)	266 (1.4)
Montana †	263 (2.8)	266 (3.4)	273 (1.4)
Nevada	254 (1.7)	258 (2.5)	262 (2.1)
New Mexico	260 (2.7)	261 (1.6)	253 (1.7)
New York †	254 (2.7)	278 (2.4)	271 (2.2)
North Carolina	267 (2.0)	263 (2.6)	261 (1.5)
Oklahoma	265 (2.0)	268 (2.1)	264 (1.7)
Oregon	264 (4.0)	269 (2.2)	263 (1.6)
Rhode Island	252 (2.7)	265 (1.8)	271 (3.0)
South Carolina	257 (2.2)	260 (1.9)	249 (2.2)
Tennessee	253 (2.2)	264 (2.4)	261 (1.8)
Texas	259 (2.5)	266 (2.2)	263 (3.5)
Utah	264 (1.8)	266 (1.3)	261 (3.1)
Virginia	260 (1.9)	274 (1.7)	263 (2.2)
Washington	264 (2.2)	266 (2.2)	263 (2.1)
West Virginia	265 (3.7)	264 (3.2)	260 (1.4)
Wisconsin †	256 (3.1)	273 (2.5)	269 (1.9)
Wyoming	263 (3.0)	*** (***)	262 (1.3)
Other Jurisdictions			
District of Columbia	236 (2.0)	*** (***)	*** (***)
DDESS	268 (3.6)	265 (7.7)	279 (5.4)
DoDDS	*** (***)	*** (***)	*** (***)
Virgin Islands	*** (***)	*** (***)	233 (2.9)

The standard errors of the estimated scale scores appear in parentheses.
***(***) Insufficient sample size.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples.
Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.10

Percentage of grade 8 students at or above the Proficient level by type of location for public schools only: 1998

	Percentage at or above Proficient		
	Central city	Urban fringe/ large town	Rural/ small town
Nation	25 (1.4)	35 (1.6)	31 (1.7)
States			
Alabama	20 (3.2)	25 (2.9)	20 (1.9)
Arizona	29 (2.0)	32 (3.1)	17 (3.2)
Arkansas	22 (2.8)	27 (3.5)	23 (1.5)
California †	19 (2.2)	23 (2.7)	*** (***)
Colorado	25 (3.2)	33 (2.4)	32 (2.7)
Connecticut	20 (3.3)	46 (2.4)	50 (3.4)
Delaware	24 (2.7)	24 (2.6)	27 (1.9)
Florida	24 (2.4)	24 (1.9)	16 (3.5)
Georgia	13 (3.6)	30 (2.3)	22 (2.6)
Hawaii	22 (2.2)	18 (1.2)	17 (2.6)
Kansas †	26 (3.9)	43 (3.7)	36 (2.0)
Kentucky	30 (5.4)	33 (3.5)	28 (2.1)
Louisiana	17 (3.0)	19 (1.7)	17 (2.2)
Maine	48 (5.9)	41 (5.8)	41 (1.9)
Maryland †	17 (4.9)	34 (2.6)	35 (3.5)
Massachusetts	21 (4.2)	42 (3.6)	41 (3.8)
Minnesota †	25 (5.6)	43 (2.1)	33 (3.4)
Mississippi	13 (1.4)	23 (2.6)	18 (1.5)
Missouri	23 (3.9)	29 (2.6)	32 (1.9)
Montana †	28 (3.1)	36 (3.8)	42 (1.9)
Nevada	22 (1.7)	26 (2.3)	26 (2.8)
New Mexico	27 (3.0)	27 (2.5)	18 (1.7)
New York †	20 (3.1)	47 (3.6)	36 (3.7)
North Carolina	36 (2.4)	30 (3.9)	28 (1.8)
Oklahoma	29 (3.4)	31 (2.5)	26 (2.5)
Oregon	36 (5.0)	37 (2.9)	28 (2.2)
Rhode Island	19 (1.9)	33 (1.9)	42 (2.6)
South Carolina	24 (2.4)	26 (2.0)	17 (1.5)
Tennessee	22 (2.5)	30 (3.6)	27 (2.4)
Texas	25 (2.7)	32 (3.4)	28 (4.3)
Utah	31 (2.0)	33 (1.6)	26 (3.3)
Virginia	25 (2.8)	43 (2.2)	28 (2.8)
Washington	32 (2.7)	33 (3.0)	29 (2.6)
West Virginia	34 (4.2)	29 (4.2)	25 (1.3)
Wisconsin †	24 (3.2)	39 (4.1)	35 (3.1)
Wyoming	29 (3.0)	*** (***)	29 (1.4)
Other Jurisdictions			
District of Columbia	12 (1.3)	*** (***)	*** (***)
DoDEA/DDESS	36 (3.9)	34 (7.9)	48 (10.7)
DoDEA/DoDDS	*** (***)	*** (***)	*** (***)
Virgin Islands	*** (***)	*** (***)	10 (2.5)

The standard errors of the estimated percentages appear in parentheses.
***(***) Insufficient sample size.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National results are based on the national assessment sample, not on aggregated state assessment samples.
Differences between states and jurisdictions may be partially explained by other factors not included in this table.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.11

Percentages of grade 4 students by gender for public schools only: 1998

	Male	Female
Nation	50 (0.7)	50 (0.7)
States		
Alabama	51 (1.2)	49 (1.2)
Arizona	49 (1.0)	51 (1.0)
Arkansas	50 (0.9)	50 (0.9)
California†	48 (0.9)	52 (0.9)
Colorado	49 (1.0)	51 (1.0)
Connecticut	47 (1.0)	53 (1.0)
Delaware	51 (1.2)	49 (1.2)
Florida	50 (0.9)	50 (0.9)
Georgia	50 (1.0)	50 (1.0)
Hawaii	50 (1.2)	50 (1.2)
Iowa†	50 (1.1)	50 (1.1)
Kansas†	53 (1.1)	47 (1.1)
Kentucky	50 (1.0)	50 (1.0)
Louisiana	49 (1.1)	51 (1.1)
Maine	51 (1.2)	49 (1.2)
Maryland	49 (1.2)	51 (1.2)
Massachusetts†	48 (1.0)	52 (1.0)
Michigan	49 (1.0)	51 (1.0)
Minnesota†	51 (1.1)	49 (1.1)
Mississippi	49 (1.1)	51 (1.1)
Missouri	52 (0.9)	48 (0.9)
Montana†	50 (1.2)	50 (1.2)
Nevada	50 (0.9)	50 (0.9)
New Hampshire†	51 (1.0)	49 (1.0)
New Mexico	49 (1.3)	51 (1.3)
New York†	49 (0.9)	51 (0.9)
North Carolina	49 (0.9)	51 (0.9)
Oklahoma	50 (1.2)	50 (1.2)
Oregon	49 (1.0)	51 (1.0)
Rhode Island	53 (1.2)	47 (1.2)
South Carolina	48 (1.2)	52 (1.2)
Tennessee	50 (1.1)	50 (1.1)
Texas	50 (1.0)	50 (1.0)
Utah	52 (1.3)	48 (1.3)
Virginia	50 (0.8)	50 (0.8)
Washington	51 (0.9)	49 (0.9)
West Virginia	48 (1.0)	52 (1.0)
Wisconsin†	50 (1.1)	50 (1.1)
Wyoming	51 (1.2)	49 (1.2)
Other Jurisdictions		
District of Columbia	48 (1.1)	52 (1.1)
DDESS	49 (0.8)	51 (0.8)
DoDDS	50 (1.1)	50 (1.1)
Virgin Islands	47 (1.3)	53 (1.3)

The standard errors of the estimated percentages appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.12

Percentages of grade 8 students by gender for public schools only: 1998

	Male	Female
Nation	51 (0.5)	49 (0.5)
States		
Alabama	50 (1.1)	50 (1.1)
Arizona	50 (1.2)	50 (1.2)
Arkansas	51 (1.1)	49 (1.1)
California †	50 (1.1)	50 (1.1)
Colorado	52 (1.0)	48 (1.0)
Connecticut	51 (1.0)	49 (1.0)
Delaware	50 (1.1)	50 (1.1)
Florida	49 (1.0)	51 (1.0)
Georgia	51 (1.1)	49 (1.1)
Hawaii	50 (0.8)	50 (0.8)
Kansas †	50 (1.1)	50 (1.1)
Kentucky	51 (1.0)	49 (1.0)
Louisiana	49 (1.0)	51 (1.0)
Maine	50 (1.0)	50 (1.0)
Maryland †	51 (1.3)	49 (1.3)
Massachusetts	51 (1.3)	49 (1.3)
Minnesota †	51 (1.0)	49 (1.0)
Mississippi	49 (1.2)	51 (1.2)
Missouri	52 (1.1)	48 (1.1)
Montana †	48 (1.0)	52 (1.0)
Nevada	52 (1.0)	48 (1.0)
New Mexico	49 (1.0)	51 (1.0)
New York †	49 (1.4)	51 (1.4)
North Carolina	48 (1.1)	52 (1.1)
Oklahoma	50 (1.2)	50 (1.2)
Oregon	51 (1.0)	49 (1.0)
Rhode Island	50 (1.0)	50 (1.0)
South Carolina	48 (1.1)	52 (1.1)
Tennessee	49 (1.3)	51 (1.3)
Texas	50 (1.1)	50 (1.1)
Utah	51 (1.1)	49 (1.1)
Virginia	50 (1.0)	50 (1.0)
Washington	51 (1.1)	49 (1.1)
West Virginia	50 (1.1)	50 (1.1)
Wisconsin †	50 (1.1)	50 (1.1)
Wyoming	52 (0.8)	48 (0.8)
Other Jurisdictions		
District of Columbia	48 (1.3)	52 (1.3)
DDESS	52 (2.3)	48 (2.3)
DoDDS	51 (1.1)	49 (1.1)
Virgin Islands	48 (1.9)	52 (1.9)

The standard errors of the estimated percentages appear in parentheses.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.13

Percentages of grade 4 students by race/ethnicity for public schools only: 1998

	White	Black	Hispanic	Asian/ Pacific Islander	American Indian
Nation	66 (0.6)	16 (0.4)	14 (0.5)	2 (0.2)	2 (0.2)
States					
Alabama	61 (2.0)	30 (2.0)	6 (0.6)	1 (0.2)	2 (0.4)
Arizona	54 (2.0)	5 (0.9)	34 (1.8)	2 (0.3)	5 (0.9)
Arkansas	70 (1.9)	21 (1.6)	6 (0.7)	0 (0.1)	2 (0.4)
California†	43 (2.7)	8 (1.4)	34 (2.4)	13 (1.9)	2 (0.4)
Colorado	68 (1.7)	6 (0.9)	21 (1.5)	3 (0.4)	2 (0.3)
Connecticut	72 (2.0)	11 (1.3)	13 (1.1)	3 (0.4)	1 (0.3)
Delaware	61 (1.2)	25 (0.9)	9 (0.8)	2 (0.6)	2 (0.3)
Florida	52 (1.8)	24 (1.8)	20 (1.4)	2 (0.3)	2 (0.2)
Georgia	50 (1.6)	38 (1.7)	8 (0.8)	2 (0.5)	2 (0.3)
Hawaii	20 (1.0)	5 (0.4)	13 (0.7)	59 (1.3)	2 (0.2)
Iowa†	86 (1.0)	4 (0.5)	6 (0.7)	2 (0.5)	2 (0.3)
Kansas†	74 (1.7)	10 (1.3)	10 (1.3)	2 (0.3)	4 (0.6)
Kentucky	85 (1.2)	9 (1.0)	3 (0.5)	1 (0.2)	1 (0.2)
Louisiana	50 (1.9)	39 (1.7)	7 (0.9)	1 (0.4)	2 (0.4)
Maine	90 (1.0)	2 (0.3)	4 (0.6)	2 (0.4)	2 (0.4)
Maryland	53 (2.1)	32 (1.7)	9 (1.0)	4 (0.6)	2 (0.3)
Massachusetts†	78 (1.7)	7 (0.8)	10 (1.3)	4 (0.7)	2 (0.4)
Michigan	73 (2.2)	14 (2.0)	9 (1.0)	2 (0.6)	2 (0.3)
Minnesota†	82 (1.4)	6 (1.2)	7 (1.0)	3 (0.5)	2 (0.4)
Mississippi	50 (1.9)	43 (2.0)	6 (0.8)	1 (0.1)	1 (0.2)
Missouri	75 (1.7)	15 (1.5)	7 (0.6)	1 (0.2)	2 (0.3)
Montana†	83 (1.6)	1 (0.2)	8 (0.8)	1 (0.2)	7 (1.1)
Nevada	60 (1.4)	9 (0.9)	24 (1.1)	5 (0.6)	3 (0.4)
New Hampshire†	89 (0.8)	1 (0.2)	6 (0.6)	1 (0.3)	2 (0.4)
New Mexico	39 (1.7)	4 (0.5)	46 (1.8)	2 (0.4)	10 (1.3)
New York†	60 (2.2)	16 (1.3)	18 (1.9)	4 (0.8)	1 (0.3)
North Carolina	62 (1.6)	27 (1.3)	7 (0.7)	1 (0.3)	2 (0.5)
Oklahoma	70 (1.6)	8 (1.2)	10 (0.9)	2 (0.3)	11 (1.0)
Oregon	75 (1.0)	3 (0.3)	13 (1.1)	5 (0.5)	5 (0.4)
Rhode Island	74 (1.8)	7 (0.8)	14 (1.0)	3 (0.5)	2 (0.3)
South Carolina	54 (1.5)	37 (1.6)	6 (0.5)	1 (0.2)	2 (0.3)
Tennessee	70 (1.9)	24 (1.7)	5 (0.7)	1 (0.2)	1 (0.3)
Texas	47 (2.2)	15 (2.1)	34 (2.2)	3 (0.4)	1 (0.3)
Utah	78 (1.3)	2 (0.3)	14 (0.9)	3 (0.4)	3 (0.6)
Virginia	63 (1.9)	23 (1.6)	8 (0.9)	4 (0.5)	2 (0.3)
Washington	73 (1.6)	5 (0.6)	11 (1.1)	7 (1.0)	4 (0.6)
West Virginia	88 (1.4)	4 (0.9)	6 (0.8)	1 (0.1)	2 (0.4)
Wisconsin†	79 (1.6)	9 (1.1)	8 (0.9)	2 (0.4)	2 (0.4)
Wyoming	80 (1.2)	1 (0.2)	12 (1.0)	1 (0.2)	5 (0.7)
Other Jurisdictions					
District of Columbia	7 (0.4)	75 (1.1)	15 (0.8)	1 (0.3)	2 (0.3)
DDESS	47 (0.9)	29 (1.0)	19 (0.6)	3 (0.4)	2 (0.3)
DoDDS	47 (1.0)	18 (0.7)	15 (0.7)	15 (0.9)	3 (0.3)
Virgin Islands	3 (0.4)	75 (1.6)	19 (1.5)	1 (0.2)	1 (0.3)

The standard errors of the estimated percentages appear in parentheses.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples.
Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table D.14:

Percentages of grade 8 students by race/ethnicity for public schools only: 1998

	White	Black	Hispanic	Asian/ Pacific Islander	American Indian
Nation	66 (0.5)	15 (0.3)	14 (0.3)	4 (0.3)	1 (0.2)
States					
Alabama	62 (2.0)	31 (1.8)	4 (0.6)	1 (0.2)	1 (0.3)
Arizona	57 (1.9)	4 (0.7)	31 (1.6)	2 (0.4)	6 (1.0)
Arkansas	73 (1.6)	21 (1.5)	3 (0.4)	1 (0.3)	1 (0.2)
California†	38 (2.2)	8 (1.2)	41 (2.0)	11 (1.4)	2 (0.6)
Colorado	68 (1.8)	5 (1.2)	22 (1.5)	3 (0.4)	1 (0.2)
Connecticut	74 (1.4)	12 (1.0)	10 (0.9)	3 (0.4)	1 (0.2)
Delaware	63 (1.5)	26 (0.9)	7 (1.2)	3 (0.3)	1 (0.2)
Florida	52 (2.0)	24 (1.8)	20 (1.5)	3 (0.4)	1 (0.2)
Georgia	58 (1.9)	34 (1.8)	5 (0.6)	2 (0.4)	1 (0.2)
Hawaii	16 (0.7)	3 (0.5)	10 (0.6)	69 (0.9)	1 (0.2)
Kansas†	80 (1.7)	8 (1.4)	8 (1.1)	2 (0.5)	1 (0.3)
Kentucky	87 (1.4)	9 (1.2)	2 (0.4)	1 (0.2)	1 (0.2)
Louisiana	55 (1.7)	38 (1.6)	5 (0.4)	1 (0.3)	1 (0.2)
Maine	93 (0.5)	1 (0.2)	2 (0.3)	1 (0.3)	2 (0.4)
Maryland†	58 (2.2)	30 (2.5)	7 (0.9)	4 (0.8)	1 (0.2)
Massachusetts	76 (1.5)	7 (1.1)	11 (1.2)	5 (0.8)	1 (0.2)
Minnesota†	85 (1.5)	3 (0.6)	5 (0.9)	4 (0.6)	2 (0.4)
Mississippi	50 (1.9)	44 (1.7)	4 (0.5)	1 (0.3)	1 (0.2)
Missouri	81 (1.7)	14 (1.5)	2 (0.3)	1 (0.3)	1 (0.2)
Montana†	88 (1.2)	1 (0.2)	4 (0.5)	1 (0.2)	7 (1.0)
Nevada	62 (1.1)	8 (0.7)	22 (0.9)	5 (0.4)	2 (0.4)
New Mexico	38 (1.5)	2 (0.4)	51 (1.4)	2 (0.3)	7 (0.7)
New York†	57 (2.5)	16 (1.4)	20 (2.0)	5 (1.1)	2 (0.3)
North Carolina	64 (1.8)	27 (1.3)	4 (0.5)	1 (0.3)	4 (1.6)
Oklahoma	72 (1.6)	9 (1.0)	7 (0.8)	2 (0.2)	11 (1.0)
Oregon	81 (1.3)	3 (0.6)	8 (0.7)	4 (0.6)	3 (0.4)
Rhode Island	79 (0.6)	6 (0.6)	11 (0.8)	3 (0.4)	2 (0.3)
South Carolina	56 (1.7)	38 (1.6)	4 (0.4)	1 (0.3)	1 (0.2)
Tennessee	73 (1.9)	21 (1.6)	4 (0.6)	1 (0.3)	1 (0.2)
Texas	48 (2.2)	12 (1.7)	35 (2.4)	4 (0.5)	1 (0.2)
Utah	86 (0.8)	0 (0.1)	7 (0.6)	4 (0.4)	2 (0.5)
Virginia	65 (1.4)	24 (1.5)	6 (0.6)	4 (0.5)	1 (0.2)
Washington	76 (1.6)	3 (0.6)	10 (1.2)	8 (0.7)	4 (0.5)
West Virginia	92 (0.8)	3 (0.6)	2 (0.3)	1 (0.2)	2 (0.3)
Wisconsin†	81 (1.2)	9 (1.1)	5 (1.1)	2 (0.5)	2 (0.4)
Wyoming	84 (0.9)	1 (0.3)	9 (0.6)	1 (0.2)	4 (0.7)
Other Jurisdictions					
District of Columbia	5 (0.6)	82 (1.3)	10 (1.1)	2 (0.4)	1 (0.3)
DDESS	42 (2.1)	26 (1.5)	27 (2.0)	2 (0.6)	2 (0.5)
DoDDS	46 (1.1)	19 (0.9)	15 (0.8)	17 (0.9)	1 (0.2)
Virgin Islands	1 (0.4)	79 (1.5)	18 (1.5)	0 (- - -)	1 (0.5)

The standard errors of the estimated percentages appear in parentheses.

(- - -) Standard error estimates cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.15

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Percentages of grade 4 students by parents' highest education level for public schools only: 1998

	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college	I don't know
Nation	3 (0.3)	14 (0.4)	17 (0.7)	53 (1.1)	12 (0.6)
States					
Alabama	5 (0.4)	16 (0.9)	19 (0.9)	52 (1.4)	9 (0.6)
Arizona	4 (0.5)	12 (0.8)	17 (1.0)	52 (1.8)	16 (1.3)
Arkansas	4 (0.5)	16 (0.7)	21 (0.8)	47 (1.2)	12 (0.7)
California†	4 (0.7)	11 (0.8)	18 (1.3)	50 (2.1)	17 (1.5)
Colorado	2 (0.3)	11 (0.9)	16 (0.9)	59 (1.8)	11 (0.9)
Connecticut	2 (0.3)	11 (0.9)	14 (0.8)	62 (2.0)	11 (0.8)
Delaware	2 (0.2)	13 (0.8)	17 (1.1)	57 (1.1)	11 (0.6)
Florida	3 (0.5)	11 (0.6)	18 (0.8)	55 (1.3)	13 (0.9)
Georgia	4 (0.4)	13 (0.8)	19 (0.9)	55 (1.6)	9 (0.7)
Hawaii	2 (0.3)	15 (1.0)	13 (0.9)	56 (1.4)	13 (0.7)
Iowa†	2 (0.4)	17 (1.0)	16 (0.8)	55 (1.6)	11 (0.8)
Kansas†	3 (0.5)	14 (1.1)	17 (1.0)	55 (1.8)	11 (0.8)
Kentucky	6 (0.6)	19 (1.0)	23 (1.0)	41 (1.5)	11 (0.7)
Louisiana	4 (0.5)	16 (0.8)	19 (1.0)	50 (1.5)	10 (0.6)
Maine	2 (0.3)	17 (0.9)	17 (1.0)	49 (1.4)	14 (1.1)
Maryland	2 (0.4)	11 (0.7)	16 (0.9)	62 (1.5)	9 (0.8)
Massachusetts†	2 (0.4)	12 (0.9)	16 (0.9)	58 (1.3)	11 (0.7)
Michigan	2 (0.4)	15 (1.0)	18 (1.0)	53 (1.4)	13 (1.0)
Minnesota†	2 (0.3)	13 (0.7)	13 (0.8)	59 (1.4)	13 (0.8)
Mississippi	4 (0.5)	13 (0.8)	20 (0.9)	53 (1.3)	10 (0.7)
Missouri	3 (0.4)	16 (0.7)	18 (0.9)	50 (1.2)	12 (0.8)
Montana†	2 (0.4)	16 (0.8)	17 (1.0)	54 (1.6)	11 (0.8)
Nevada	4 (0.5)	13 (0.7)	18 (0.9)	50 (1.3)	16 (0.8)
New Hampshire†	2 (0.5)	15 (1.0)	15 (1.1)	55 (1.4)	13 (0.9)
New Mexico	4 (0.5)	15 (0.9)	20 (0.9)	48 (1.4)	13 (0.9)
New York†	2 (0.4)	11 (0.9)	17 (0.8)	58 (1.6)	12 (0.8)
North Carolina	4 (0.4)	14 (0.8)	17 (0.9)	54 (1.3)	12 (0.8)
Oklahoma	4 (0.5)	14 (0.8)	20 (0.9)	49 (1.6)	12 (0.7)
Oregon	3 (0.5)	13 (0.9)	17 (0.9)	52 (1.5)	15 (1.0)
Rhode Island	3 (0.5)	11 (0.7)	16 (0.7)	55 (1.5)	15 (1.2)
South Carolina	3 (0.5)	14 (0.7)	19 (1.1)	53 (1.4)	10 (0.8)
Tennessee	4 (0.4)	16 (0.9)	19 (0.9)	52 (1.3)	9 (0.6)
Texas	6 (0.7)	10 (0.6)	17 (1.0)	54 (1.5)	13 (0.9)
Utah	2 (0.4)	14 (0.8)	16 (0.7)	54 (1.4)	14 (0.8)
Virginia	3 (0.4)	14 (0.8)	19 (0.8)	52 (1.6)	11 (0.9)
Washington	3 (0.4)	13 (0.8)	17 (0.8)	53 (1.4)	14 (0.9)
West Virginia	6 (0.5)	21 (0.7)	19 (1.0)	43 (1.6)	11 (0.9)
Wisconsin†	2 (0.4)	17 (1.1)	18 (1.0)	53 (1.5)	10 (0.7)
Wyoming	2 (0.4)	14 (0.7)	18 (0.8)	54 (1.2)	12 (0.7)
Other Jurisdictions					
District of Columbia	2 (0.4)	8 (0.6)	20 (1.0)	61 (1.0)	9 (0.8)
DDESS	1 (0.2)	11 (0.7)	20 (0.7)	55 (1.0)	13 (0.8)
DoDDS	1 (0.2)	10 (0.5)	20 (0.9)	58 (1.0)	11 (0.6)
Virgin Islands	6 (0.5)	12 (0.9)	22 (1.2)	45 (1.2)	15 (1.1)

The standard errors of the estimated percentages appear in parentheses.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table D.16:

Percentages of grade 8 students by parents' highest education level for public schools only: 1998

	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college	I don't know
Nation	8 (0.4)	23 (0.6)	18 (0.5)	42 (0.9)	10 (0.4)
States					
Alabama	10 (0.8)	29 (1.1)	17 (0.7)	36 (1.3)	8 (0.6)
Arizona	10 (0.9)	19 (0.8)	19 (1.0)	40 (1.7)	11 (0.7)
Arkansas	8 (0.5)	24 (1.0)	21 (0.7)	31 (1.3)	15 (0.8)
California†	11 (1.1)	17 (1.0)	17 (0.8)	40 (1.8)	16 (1.1)
Colorado	7 (0.6)	19 (1.1)	19 (0.9)	48 (1.6)	8 (0.6)
Connecticut	4 (0.4)	18 (0.8)	18 (0.9)	52 (1.3)	8 (0.8)
Delaware	6 (0.8)	25 (1.0)	20 (1.0)	42 (1.1)	8 (0.6)
Florida	7 (0.8)	21 (1.0)	20 (0.8)	41 (1.5)	10 (0.7)
Georgia	8 (0.8)	27 (1.2)	19 (1.0)	39 (1.9)	7 (0.5)
Hawaii	5 (0.5)	24 (0.8)	20 (0.7)	38 (1.1)	13 (0.7)
Kansas†	6 (0.6)	20 (1.1)	20 (1.2)	45 (1.5)	9 (0.7)
Kentucky	11 (0.8)	29 (1.2)	20 (0.7)	33 (1.7)	7 (0.6)
Louisiana	10 (0.9)	30 (1.3)	20 (0.8)	31 (1.6)	8 (0.6)
Maine	4 (0.4)	23 (1.1)	22 (0.9)	45 (1.3)	6 (0.4)
Maryland†	5 (0.6)	21 (1.0)	19 (0.8)	47 (1.7)	8 (0.7)
Massachusetts	6 (0.6)	19 (1.0)	16 (1.0)	50 (1.6)	8 (0.8)
Minnesota†	4 (0.6)	18 (1.2)	20 (1.0)	49 (1.6)	8 (0.8)
Mississippi	11 (0.9)	28 (1.0)	15 (0.8)	38 (1.5)	8 (0.6)
Missouri	7 (0.8)	24 (1.2)	22 (0.9)	39 (1.7)	8 (0.6)
Montana†	5 (0.6)	19 (1.2)	20 (1.1)	51 (1.6)	5 (0.5)
Nevada	9 (0.6)	22 (0.8)	21 (0.9)	35 (0.9)	13 (0.8)
New Mexico	10 (0.9)	24 (1.1)	21 (0.9)	36 (1.3)	9 (0.7)
New York†	7 (0.7)	21 (1.1)	17 (1.1)	45 (1.7)	10 (0.9)
North Carolina	7 (0.7)	22 (1.1)	20 (0.9)	44 (1.7)	7 (0.7)
Oklahoma	7 (0.6)	22 (1.2)	21 (0.9)	40 (1.6)	9 (0.7)
Oregon	6 (0.7)	16 (1.0)	27 (1.1)	43 (1.8)	8 (0.7)
Rhode Island	8 (0.5)	19 (0.8)	18 (0.7)	44 (1.0)	12 (0.8)
South Carolina	7 (0.7)	28 (1.1)	18 (0.9)	39 (1.1)	8 (0.6)
Tennessee	9 (0.6)	28 (1.4)	18 (0.9)	38 (2.0)	6 (0.6)
Texas	12 (1.0)	20 (0.9)	19 (0.8)	38 (1.6)	11 (0.8)
Utah	3 (0.4)	16 (1.0)	18 (1.0)	55 (1.5)	7 (0.6)
Virginia	6 (0.6)	25 (1.2)	16 (0.8)	47 (1.5)	7 (0.6)
Washington	6 (0.7)	17 (1.0)	20 (1.0)	46 (1.7)	11 (0.7)
West Virginia	10 (0.8)	27 (1.1)	23 (0.9)	34 (1.3)	6 (0.5)
Wisconsin†	5 (0.8)	25 (1.2)	26 (1.3)	37 (1.7)	7 (0.6)
Wyoming	5 (0.4)	20 (0.9)	20 (0.9)	47 (0.9)	8 (0.6)
Other Jurisdictions					
District of Columbia	10 (0.9)	30 (1.3)	17 (1.0)	32 (1.1)	12 (0.8)
DDESS	2 (1.0)	17 (1.4)	24 (1.9)	50 (2.1)	8 (1.0)
DoDDS	1 (0.3)	17 (0.9)	24 (1.0)	50 (1.1)	8 (0.7)
Virgin Islands	16 (1.3)	32 (1.8)	13 (1.2)	24 (1.7)	16 (1.6)

The standard errors of the estimated percentages appear in parentheses.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Percentages of grade 4 students by type of location for public schools only: 1998

	Central city	Urban fringe/ large town	Rural/ small town
Nation	33 (1.8)	35 (2.5)	32 (2.1)
States			
Alabama	30 (2.3)	22 (2.1)	48 (3.1)
Arizona	59 (2.7)	26 (2.8)	15 (1.4)
Arkansas	25 (1.4)	17 (2.8)	58 (2.9)
California†	38 (2.7)	57 (3.1)	5 (2.0)
Colorado	32 (1.7)	45 (2.3)	23 (2.4)
Connecticut	21 (2.0)	50 (3.1)	29 (1.6)
Delaware	41 (0.9)	35 (1.1)	24 (0.6)
Florida	45 (1.9)	42 (2.3)	13 (1.3)
Georgia	17 (1.6)	47 (2.7)	37 (2.3)
Hawaii	26 (1.5)	45 (1.7)	28 (1.5)
Iowa†	25 (1.4)	16 (1.9)	59 (1.9)
Kansas†	29 (1.9)	20 (2.7)	51 (2.4)
Kentucky	23 (1.3)	22 (2.0)	55 (2.2)
Louisiana	35 (2.2)	31 (2.8)	34 (2.2)
Maine	9 (1.7)	13 (1.9)	77 (2.4)
Maryland	18 (1.1)	63 (1.8)	19 (1.5)
Massachusetts†	25 (2.2)	42 (2.2)	33 (3.2)
Michigan	27 (1.8)	42 (2.0)	31 (2.2)
Minnesota†	16 (1.5)	44 (1.9)	40 (1.8)
Mississippi	13 (1.5)	24 (2.8)	63 (2.5)
Missouri	21 (1.7)	39 (1.8)	39 (2.0)
Montana†	20 (1.3)	12 (1.7)	68 (1.8)
Nevada	61 (1.9)	24 (2.2)	14 (1.8)
New Hampshire†	20 (1.4)	25 (2.0)	55 (1.9)
New Mexico	36 (1.9)	26 (1.7)	38 (2.3)
New York†	46 (1.5)	37 (2.0)	18 (1.5)
North Carolina	32 (2.6)	25 (3.3)	43 (2.2)
Oklahoma	25 (1.5)	34 (3.0)	41 (3.0)
Oregon	27 (1.2)	41 (2.2)	31 (2.3)
Rhode Island	37 (1.8)	42 (2.3)	21 (2.0)
South Carolina	25 (1.0)	31 (2.3)	44 (2.2)
Tennessee	42 (0.9)	22 (1.8)	36 (2.1)
Texas	49 (2.2)	30 (2.3)	21 (1.6)
Utah	28 (1.7)	43 (2.4)	28 (2.8)
Virginia	30 (1.0)	39 (2.2)	31 (2.3)
Washington	36 (1.8)	37 (2.3)	27 (2.3)
West Virginia	15 (1.3)	21 (2.1)	64 (1.9)
Wisconsin†	36 (1.5)	27 (2.0)	37 (2.4)
Wyoming	26 (1.7)	6 (1.6)	68 (1.2)
Other Jurisdictions			
District of Columbia	100 (---)	0 (---)	0 (---)
DDESS	46 (0.6)	28 (0.6)	25 (0.7)
DoDDS	*** (***)	*** (***)	*** (***)
Virgin Islands	0 (---)	0 (---)	100 (---)

The standard errors of the estimated percentages appear in parentheses. ***(***) Insufficient sample size.
(---) Standard error estimates cannot be accurately determined.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.18

Percentages of grade 8 students by type of location for public schools only: 1998

	Central city	Urban fringe/ large town	Rural/ small town
Nation	32 (1.6)	40 (2.0)	28 (1.6)
States			
Alabama	28 (2.2)	22 (1.5)	50 (2.5)
Arizona	57 (2.7)	26 (2.8)	17 (1.3)
Arkansas	25 (1.8)	14 (1.9)	61 (2.2)
California †	40 (2.0)	55 (2.2)	4 (1.2)
Colorado	33 (2.2)	42 (2.7)	25 (1.8)
Connecticut	21 (1.3)	49 (1.9)	30 (1.6)
Delaware	40 (1.2)	29 (1.0)	31 (1.2)
Florida	45 (1.4)	46 (2.1)	9 (1.9)
Georgia	13 (1.5)	48 (2.6)	40 (2.2)
Hawaii	28 (0.4)	42 (0.6)	31 (0.6)
Kansas †	24 (1.6)	26 (2.2)	51 (2.1)
Kentucky	23 (1.3)	23 (2.5)	54 (2.6)
Louisiana	34 (2.0)	32 (2.3)	34 (2.8)
Maine	10 (1.6)	11 (1.2)	79 (1.5)
Maryland †	16 (1.7)	65 (2.5)	19 (2.0)
Massachusetts	26 (1.4)	43 (2.2)	30 (2.1)
Minnesota †	13 (0.8)	49 (2.1)	39 (2.1)
Mississippi	12 (0.5)	26 (2.7)	62 (2.7)
Missouri	22 (1.9)	39 (2.1)	38 (2.1)
Montana †	21 (1.1)	10 (1.7)	69 (2.0)
Nevada	54 (1.3)	30 (1.6)	16 (1.5)
New Mexico	32 (1.4)	28 (1.2)	40 (1.5)
New York †	42 (2.2)	37 (2.5)	21 (2.2)
North Carolina	32 (1.5)	24 (2.3)	44 (2.1)
Oklahoma	18 (1.1)	39 (2.5)	43 (2.6)
Oregon	28 (1.0)	38 (1.9)	34 (2.0)
Rhode Island	32 (1.1)	47 (1.3)	21 (0.9)
South Carolina	27 (1.1)	31 (1.7)	42 (1.6)
Tennessee	40 (2.0)	25 (2.1)	35 (2.2)
Texas	48 (1.8)	29 (2.1)	23 (1.7)
Utah	30 (1.2)	50 (1.8)	21 (1.6)
Virginia	29 (1.0)	40 (1.9)	31 (1.9)
Washington	31 (1.5)	41 (2.1)	28 (1.9)
West Virginia	14 (1.1)	21 (2.4)	66 (2.1)
Wisconsin †	31 (1.0)	27 (2.3)	42 (2.4)
Wyoming	27 (0.5)	3 (0.1)	70 (0.5)
Other Jurisdictions			
District of Columbia	100 (---)	0 (---)	0 (---)
DoDEA/DDESS	50 (2.2)	34 (2.6)	16 (0.7)
DoDEA/DoDDS	*** (***)	*** (***)	*** (***)
Virgin Islands	0 (---)	0 (---)	100 (---)

The standard errors of the estimated percentages appear in parentheses. ***(***) Insufficient sample size.
(---) Standard error estimates cannot be accurately determined.
† Indicates jurisdiction did not meet one or more of the guidelines for school participation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

Table D.19

Percentages of grade 4 students by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible	Not eligible	Information not available
Nation	38 (1.3)	54 (1.9)	7 (1.9)
States			
Alabama	49 (2.3)	48 (2.6)	3 (1.3)
Arizona	41 (2.6)	45 (2.7)	14 (3.2)
Arkansas	47 (2.1)	49 (2.1)	4 (1.8)
California †	42 (3.4)	43 (4.5)	15 (4.2)
Colorado	27 (1.7)	71 (2.0)	2 (1.3)
Connecticut	24 (1.8)	66 (3.4)	10 (3.2)
Delaware	36 (1.1)	62 (1.1)	2 (0.6)
Florida	48 (1.9)	47 (2.0)	4 (1.5)
Georgia	49 (2.0)	44 (2.0)	6 (2.3)
Hawaii	46 (1.9)	53 (2.0)	1 (---)
Iowa †	27 (1.3)	69 (1.7)	3 (1.8)
Kansas †	34 (2.0)	62 (2.7)	4 (2.0)
Kentucky	47 (1.9)	52 (2.0)	1 (0.4)
Louisiana	61 (2.3)	34 (1.9)	5 (2.2)
Maine	35 (1.8)	63 (1.9)	2 (1.0)
Maryland	33 (1.9)	65 (2.0)	2 (0.8)
Massachusetts †	27 (1.8)	68 (2.3)	5 (2.0)
Michigan	34 (2.1)	61 (2.5)	6 (2.2)
Minnesota †	27 (1.4)	69 (2.0)	3 (1.7)
Mississippi	64 (1.6)	36 (1.6)	1 (---)
Missouri	37 (2.2)	60 (2.0)	3 (1.6)
Montana †	34 (1.9)	56 (3.0)	10 (2.3)
Nevada	34 (1.9)	62 (2.4)	5 (1.7)
New Hampshire †	18 (1.3)	72 (2.5)	10 (2.6)
New Mexico	56 (2.0)	31 (2.0)	13 (2.7)
New York †	45 (2.4)	52 (2.8)	3 (1.6)
North Carolina	41 (2.2)	54 (2.9)	5 (1.9)
Oklahoma	48 (2.0)	47 (2.2)	5 (1.7)
Oregon	36 (2.3)	57 (2.5)	7 (2.5)
Rhode Island	37 (1.9)	63 (1.9)	0 (0.1)
South Carolina	46 (2.0)	53 (1.7)	1 (---)
Tennessee	44 (2.6)	53 (2.5)	3 (1.5)
Texas	45 (3.0)	50 (2.7)	5 (2.3)
Utah	32 (2.3)	51 (3.0)	17 (3.7)
Virginia	31 (2.0)	61 (2.8)	8 (2.7)
Washington	33 (2.1)	64 (2.4)	3 (1.5)
West Virginia	48 (1.9)	50 (2.0)	1 (---)
Wisconsin †	24 (1.8)	71 (2.3)	5 (2.1)
Wyoming	34 (1.7)	62 (2.0)	4 (1.2)
Other Jurisdictions			
District of Columbia	79 (0.7)	12 (0.6)	9 (0.4)
DDESS	50 (0.9)	48 (0.9)	2 (0.2)
DoDDS	9 (0.6)	19 (0.5)	72 (0.5)
Virgin Islands	95 (0.4)	0 (---)	5 (0.4)

The standard errors of the estimated percentages appear in parentheses.

(---) Standard error estimates cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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Table D.20

Percentages of grade 8 students by free/reduced-price lunch program eligibility for public schools only: 1998

	Eligible	Not eligible	Information not available
Nation	30 (0.8)	58 (1.8)	12 (1.9)
States			
Alabama	**40 (2.0)**	**58 (2.3)**	**2 (1.0)**
Arizona	**34 (1.9)**	**53 (3.0)**	**13 (2.7)**
Arkansas	**37 (1.6)**	**59 (1.8)**	**4 (1.3)**
California†	**37 (2.6)**	**44 (4.0)**	**19 (4.4)**
Colorado	**24 (2.0)**	**67 (2.5)**	**9 (2.1)**
Connecticut	17 (1.3)	70 (3.2)	13 (3.3)
Delaware	27 (1.3)	61 (1.3)	12 (0.3)
Florida	39 (2.0)	52 (2.7)	9 (2.1)
Georgia	36 (1.7)	53 (2.9)	11 (3.2)
Hawaii	35 (1.2)	60 (1.2)	5 (0.3)
Kansas†	**33 (1.7)**	**65 (1.9)**	**2 (1.1)**
Kentucky	**40 (1.9)**	**57 (2.3)**	**3 (1.6)**
Louisiana	**48 (1.9)**	**45 (2.2)**	**7 (2.5)**
Maine	**24 (1.2)**	**68 (1.7)**	**8 (1.8)**
Maryland†	**26 (1.7)**	**72 (2.4)**	**2 (1.5)**
Massachusetts	23 (1.7)	73 (2.0)	4 (1.7)
Minnesota†	22 (1.5)	72 (2.1)	6 (1.6)
Mississippi	50 (1.7)	42 (2.0)	8 (2.1)
Missouri	27 (1.6)	70 (1.7)	3 (1.0)
Montana†	24 (1.3)	66 (2.2)	10 (2.6)
Nevada	**25 (1.4)**	**66 (1.6)**	**9 (1.0)**
New Mexico	**42 (1.7)**	**42 (2.0)**	**16 (1.7)**
New York†	**37 (2.6)**	**48 (3.7)**	**15 (3.4)**
North Carolina	**30 (1.4)**	**63 (2.5)**	**7 (2.3)**
Oklahoma	**34 (1.8)**	**57 (2.7)**	**10 (2.7)**
Oregon	26 (1.4)	68 (1.9)	5 (1.6)
Rhode Island	28 (0.8)	71 (0.8)	0 (0.1)
South Carolina	40 (1.9)	56 (2.3)	4 (2.1)
Tennessee	30 (1.7)	65 (1.9)	4 (1.4)
Texas	37 (2.0)	60 (2.3)	3 (1.3)
Utah	**21 (1.2)**	**68 (1.1)**	**11 (0.8)**
Virginia	**22 (1.3)**	**71 (2.3)**	**7 (1.9)**
Washington	**23 (1.6)**	**66 (2.7)**	**10 (2.5)**
West Virginia	**39 (1.6)**	**57 (1.7)**	**4 (1.5)**
Wisconsin†	**20 (1.7)**	**71 (3.2)**	**9 (2.8)**
Wyoming	**25 (1.3)**	**74 (1.3)**	**2 (0.3)**
Other Jurisdictions			
District of Columbia	53 (1.4)	24 (0.8)	23 (1.3)
DDESS	35 (1.9)	65 (1.9)	0 (***)
DoDDS	4 (0.3)	23 (0.7)	73 (0.8)
Virgin Islands	74 (1.0)	0 (***)	26 (1.0)

The standard errors of the estimated percentages appear in parentheses.

(***) Standard error estimates cannot be accurately determined.

† Indicates jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

NOTE: National percentages are based on the national assessment sample, not on aggregated state assessment samples. Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessment.

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APPENDIX E

State-Level Contextual Variables

To help better place results from the NAEP 1998 state assessment program into context, this appendix presents selected state-level data from sources other than NAEP. These data are taken from the *Digest of Education Statistics 1997*.

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Table E.1a:

School system characteristics from non-NAEP sources

	Estimated Total and School-Age Resident Population: 1996 (Estimates as of July 1)[1]		Enrollment in Public Elementary and Secondary Schools: Fall 1995[2]		
	Total, All Ages (in thousands)	5- to 17-year olds (in thousands)	Total	Kindergarten through Grade 8	Grades 9 to 12
Nation	265,284	49,762	44,840,481	32,340,501	12,499,980
Alabama	4,273	780	746,149	539,309	206,840
Alaska	607	135	127,618	93,434	34,184
Arizona	4,428	807	743,566	548,526	195,040
Arkansas	2,510	484	453,257	322,440	130,817
California	31,878	6,132	5,536,406	4,041,224	1,495,182
Colorado	3,823	728	656,279	478,881	177,398
Connecticut	3,274	575	517,935	384,274	133,661
Delaware	725	126	108,461	77,028	31,433
District of Columbia	543	75	79,802	61,836	17,966
Florida	14,400	2,467	2,176,222	1,613,510	562,712
Georgia	7,353	1,401	1,311,126	965,707	345,419
Hawaii	1,184	215	187,180	135,671	51,509
Idaho	1,189	258	243,097	169,556	73,541
Illinois	11,847	2,241	1,943,623	1,390,475	553,148
Indiana	5,841	1,089	977,263	684,348	292,915
Iowa	2,852	537	502,343	343,997	158,346
Kansas	2,572	507	463,008	328,701	134,307
Kentucky	3,884	710	659,821	468,242	191,579
Louisiana	4,351	906	797,366	580,348	217,018
Maine	1,243	228	213,569	156,016	57,553
Maryland	5,072	927	805,544	590,155	215,389
Massachusetts	6,092	1,031	915,007	674,588	240,419
Michigan	9,594	1,865	1,641,456	1,191,671	449,785
Minnesota	4,658	931	835,166	586,080	249,086
Mississippi	2,716	552	506,272	366,186	140,086
Missouri	5,359	1,027	889,881	635,771	254,110
Montana	879	177	165,547	116,403	49,144
Nebraska	1,652	329	289,744	203,022	86,722
Nevada	1,603	293	265,041	195,892	69,149
New Hampshire	1,162	220	194,171	141,721	52,450
New Jersey	7,988	1415	1,197,381	880,350	317,031
New Mexico	1,713	365	329,640	229,239	100,401
New York	18,185	3,220	2,813,230	1,980,208	833,022
North Carolina	7,323	1,321	1,183,090	871,320	311,770
North Dakota	644	127	119,100	82,333	36,767
Ohio	11,173	2,089	1,836,015	1,297,313	538,702
Oklahoma	3,301	653	616,393	445,780	170,613
Oregon	3,204	597	527,914	375,966	151,948
Pennsylvania	12,056	2,133	1,787,533	1,256,621	530,912
Rhode Island	990	172	149,799	109,815	39,984
South Carolina	3,699	684	645,586	463,305	182,281
South Dakota	732	153	144,685	101,491	43,194
Tennessee	5,320	958	893,770	650,601	243,169
Texas	19,128	3,870	3,748,167	2,757,273	990,894
Utah	2,000	490	477,121	327,790	149,331
Vermont	589	111	105,565	75,227	30,338
Virginia	6,675	1,177	1,079,854	787,945	291,909
Washington	5,533	1,051	956,572	680,009	276,563
West Virginia	1,826	315	307,112	211,008	96,104
Wisconsin	5,160	1,006	870,175	602,964	267,211
Wyoming	481	102	99,859	68,931	30,928

[1] U.S. Department of Commerce, Bureau of Census, Current Population Reports, Series P-25 [illegible] PPL-74 (1990 data) and [illegible] state level P-25 Reports.

[2] U.S. Department of Education, National Center for Education Statistics, Common [illegible] 1997.

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Table E.1b

School system characteristics from non-NAEP sources

	Poverty status of 5- to 17 year olds: 1995[1]		Number of Children (Birth to age 21) Served Under State-Operated Individuals With Disabilities Education Act and Chapter 1 of the Education Consolidation and Improvement Act Programs[2]	
	Number in Poverty (in thousands)	Percent in Poverty	1995-96 School Year	Percent Change: 1990-91 to 1995-96
Nation	9,583	19.0	5,573,350	17.0
Alabama	198	22.6	98,266	3.5
Alaska	10	6.7	17,604	19.4
Arizona	199	24.2	76,089	32.9
Arkansas	108	21.7	53,880	12.6
California	1,456	23.4	565,670	20.5
Colorado	82	10.7	69,850	22.3
Connecticut	120	17.8	76,123	17.9
Delaware	23	16.6	15,624	9.3
District of Columbia	27	31.5	7,058	12.2
Florida	540	22.1	310,184	31.4
Georgia	218	15.6	135,042	32.4
Hawaii	31	14.2	16,029	21.7
Idaho	39	16.7	23,826	8.2
Illinois	467	20.3	257,427	7.6
Indiana	153	14.5	133,962	16.9
Iowa	98	15.5	65,952	8.7
Kansas	51	10.7	53,602	18.6
Kentucky	139	19.3	82,887	4.4
Louisiana	205	24.4	91,059	23.6
Maine	31	14.3	31,870	13.9
Maryland	119	13.3	100,863	9.7
Massachusetts	170	16.8	157,196	1.7
Michigan	292	14.8	188,768	13.1
Minnesota	101	10.4	98,311	21.5
Mississippi	212	36.4	66,804	9.6
Missouri	89	9.8	121,407	19.1
Montana	31	19.0	18,364	6.7
Nebraska	41	11.9	39,201	19.7
Nevada	33	11.1	28,202	52.9
New Hampshire	8	4.3	25,150	27.9
New Jersey	127	9.5	197,062	8.7
New Mexico	150	34.9	47,578	32.0
New York	805	23.6	394,104	28.2
North Carolina	233	20.2	147,078	19.5
North Dakota	17	13.2	12,355	-1.2
Ohio	380	17.1	227,529	10.8
Oklahoma	151	24.2	71,728	9.3
Oregon	92	16.2	65,022	17.9
Pennsylvania	369	16.5	211,711	3.5
Rhode Island	27	16.4	25,072	19.0
South Carolina	249	31.7	86,522	11.3
South Dakota	25	17.3	15,512	3.5
Tennessee	204	19.6	126,461	20.6
Texas	887	23.1	441,543	25.9
Utah	43	8.4	52,463	9.9
Vermont	16	13.0	11,242	-8.3
Virginia	154	14.5	141,759	24.4
Washington	156	16.6	106,890	25.2
West Virginia	71	25.8	46,487	7.8
Wisconsin	123	11.2	106,413	22.4
Wyoming	11	10.6	12,549	12.0

[1] U.S. Department of Commerce, Bureau of the Census, *Decennial Census*, *Minority Economic Profiles*, unpublished data, and *Current Population Reports*, Series P-60, "Poverty in the United States," "Money Income of Households, Families, and Persons in the United States," and "Income, Poverty, and Valuation of Noncash Benefits," various years, and "Money Income in the U.S.: 1995," P60-193. (Data prepared April 1997)

[2] U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Annual Report to Congress on the Implementation of The Individuals with Disabilities Education Act*, various years, and unpublished tabulations. (Data prepared May 1997)

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Table E.1c:

School system characteristics from non-NAEP sources

	Elementary and Secondary Education Expenditures Per Capita: 1992-93[1]	Pupil-Teacher Ratios in Public Elementary and Secondary Schools: Fall 1995[2]	Estimated Annual Salaries of Teachers, Public Elementary and Secondary Schools (current dollars)	
			NEA: 1996-97[3]	AFT: 1995-96[4]
Nation	$ 931.76	17.3	38,509	37,643
Alabama	604.32	16.9	32,549	31,323
Alaska	1,817.84	17.3	50,647	47,349
Arizona	879.81	19.6	33,350	32,843
Arkansas	707.23	17.1	29,975	29,845
California	850.02	24.0	43,474	42,161
Colorado	922.90	18.5	36,175	36,364
Connecticut	1,152.41	14.4	50,426	50,938
Delaware	972.53	16.8	41,436	40,533
District of Columbia	1,071.63	15.0	45,012	42,424
Florida	815.84	18.9	33,881	33,330
Georgia	859.03	16.5	36,042	34,130
Hawaii	711.69	17.8	35,842	37,044
Idaho	761.93	19.0	31,818	30,894
Illinois	875.70	17.1	42,679	40,513
Indiana	861.68	17.5	38,575	37,677
Iowa	906.75	15.5	33,275	32,376
Kansas	945.03	15.1	35,837	32,531
Kentucky	684.97	16.9	33,950	33,079
Louisiana	785.06	16.6	28,347	26,800
Maine	957.67	13.9	33,800	32,869
Maryland	905.65	16.8	41,148	41,229
Massachusetts	826.99	14.6	43,806	43,025
Michigan	1,081,91	19.7	44,251	47,430
Minnesota	1,121.22	17.8	37,975	36,847
Mississippi	681.73	17.5	27,720	27,692
Missouri	784.10	15.4	34,342	32,369
Montana	965.42	16.4	29,950	29,364
Nebraska	999.19	14.5	31,768	31,496
Nevada	857.19	19.1	37,340	39,535
New Hampshire	902.77	15.7	36,867	35,792
New Jersey	1,271.79	13.8	49,349	48,920
New Mexico	867.96	17.0	29,715	29,118
New York	1,289.81	15.5	49,560	48,115
North Carolina	774.92	16.2	31,225	30,411
North Dakota	862.27	15.9	27,711	26,966
Ohio	887.37	17.1	38,831	38,075
Oklahoma	842.09	15.7	29,270	29,177
Oregon	1,021.77	19.8	40,900	38,311
Pennsylvania	1,033.21	17.0	47,429	46,087
Rhode Island	928.98	14.3	43,019	41,829
South Carolina	796.08	16.2	32,659	31,397
South Dakota	857.34	15.0	26,764	26,369
Tennessee	622.02	16.7	33,789	33,126
Texas	951.31	15.6	32,644	31,633
Utah	874 .29	23.8	31,750	30,390
Vermont	955.41	13.8	37,200	36,263
Virginia	880.16	14.4	35,837	34,687
Washington	1,132.45	20.4	37,860	38,001
West Virginia	933.24	14.6	33,159	32,155
Wisconsin	1,078.02	15.8	38,950	37,586
Wyoming	1,264.73	14.8	31,721	31,571

[1] U.S. Department of Commerce, Bureau of the Census, upublished data. (This data prepared May 1997)

[2] U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys. (Data prepared April 1997)

[3] National Education Association, Estimates of School Statistics, and unpublished data. (Data prepared in August 1997)

[4] American Federation of Teachers, Survey and Analysis of Salary Trends, various years. (Data prepared in April 1997)

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